The Builder.

VOL. LXXIII. No. 2842. JULY 24, 1897.

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St. Peter's, East Grinstead.—Mr. F. A. Walters, F.S.A., Architect ..... *Single-Page Ink-Photo.*
Police Offices, Courts, &c., Rotherham.—Mr. R. J. Lovell, Architect ..... *Single-Page Photo-Litho.*
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Electric Traction.

THERE is no branch of modern engineering that has come more to the front within the last few years than electric traction. Of the importance of this method of locomotion as a means of rapidly conveying the workers in a town to their suburban residences there is now no question. In America it has practically superseded all other methods of traction, and in Europe it is making rapid progress. It is even in use on steam railroads, and there are good grounds for believing that advance in this direction will be very rapid in the near future. It is not therefore surprising that the system should have been made the subject of a large book like that of Mr. Dawson*; indeed the surprise is rather that the appearance of any important technical work on the subject should have been so long delayed.

Although the book is mainly concerned with American practice, yet due stress is laid on the importance of such first-class engineering works as the Liverpool Overhead Railway and the City and South London Railway. The problems of electric traction in this country are not so simple as some people seem to think; the best system for one town may be quite unsuitable for another. The relative advantages of various alternative systems have to be considered in each case, and they can only be properly stated by an expert engineer. In America the problems are not so difficult, for practically a scheme that will suit one town will suit a thousand, as the towns nearly all look as if they had been mapped out on squared paper before being built.

The American overhead trolley is suitable for connecting small towns, and might be advantageously used in the suburbs of some large towns. It has a future before it in this country, and Glasgow, for example, is following, in this particular at least, in the footsteps of towns in Siam and Argentina. We should be sorry, however, to see it in the crowded thoroughfares of large towns. No one appreciates more than we do the many advantages of well-lighted, well-ventilated, and fast-moving electric cars; but there is no room in main streets for a 500 volt trolley wire and the still more disfiguring guard wires, ears, frogs, and the hundred and one other accessories. It has often been stated that a trolley wire can be made absolutely safe, but it is difficult to reconcile this with the fact that fifty people were killed by shocks from it in America in 1896. This, perhaps, is a small fraction when shown as the ratio to tram miles run, but still it conclusively proves that the trolley wire has to be caged in like a wild beast. It is very common at the present time to hear engineers say that the overhead trolley system is the only practicable one; that all others are far more expensive and cost far more to keep in repair. That their first cost is greater, we admit; but in main streets there are many drawbacks to an overhead system. It is no argument to say that its unsightly appearance has been greatly exaggerated; it may have been, but we know that this side of the question has not been fairly considered by many engineers.

In the pioneer days of electric traction, Dr. Werner Von Siemens proposed that light elevated electric railways should be carried on wrought-iron posts 15 ft. high, placed ten yards apart, on each side of the main streets of Berlin. Small cars that could just hold fifteen people were to run every two minutes along a narrow-gauge railway supported by these posts. The words in which he introduced his scheme are worth recalling*:—

"Berlin, the birthplace of the dynamo and the electric railway, should anticipate the rest of the world by a system of elevated electric railways which, in the near future I see, will be a necessity. The railway itself can be made so light and elegant that there can hardly be any question of the disfigurement of the streets by it."

In comparison to Siemens's system, the overhead trolley can claim to be a great advance; but we venture to think that ten years after this, in large towns, the overhead trolley will have had its day, and we believe that within a year or two some surface or self-contained system will rival it in popularity.

Mr. Dawson's description of the West End-street Railway Company of Boston, the largest electric railway system in the world, is very interesting. The rapidity with which the cars follow one another is shown from the fact that opposite Park-street Church 4,735 cars pass per day. During a snow storm, as they have some 270 miles of streets to keep open, more than a hundred electric snow ploughs, eighty horse snow ploughs, and 400 sleighs for conveying away the snow are in operation.

The following paragraph is instructive:—

"In America the ticket system used here is not adopted. Automatic registers are put in the cars and as each passenger pays his fare a bell is rung and the passenger is recorded. Uniform fares are nearly always charged, 5 cents. (2½d.) being the rule. On many roads transfer tickets are given over connecting lines of the same system. . . . Such a system requires a very elaborate system of checking, and even then frauds are possible."

We should have liked further particulars about surface contact systems, for there is no doubt that one or other of these will soon make its appearance in London. An excellent description of the Claret-Vuilleumier system in Paris is given. This line starts at the Place de la République, goes through the Avenue de la République and the Avenue Gambetta to Romainville, one of the suburbs of Paris. It has been running for nearly a year now, and we shall soon be able to form a definite conclusion on the value of this system.

Mr. Dawson criticises a little too severely the Westinghouse closed conduit system. We fail to see how one of the magnets could go wrong and keep the contact knob alive after the car had passed. Soft iron could not suddenly acquire the properties of hardened steel, and gravity we can always depend on. Again, if there is any considerable leakage in wet weather between the rails and the knobs, the Westinghouse Company can probably devise some simple method of preventing it. Greasy mud could be got rid of by having special brushes on the cars, but we should be surprised if three chloride cells failed to work through a little greasy mud.

Mr. Dawson's remarks on the relative merits of cable and electric tramway systems are worth quoting:—

"For great and constant passenger traffic at stated speeds in broad and straight thoroughfares, and where the conditions are such as to induce the investment of large capital upon ordinary commercial

* Electric Railways and Tramways. By Philip Dawson, C.E. London: 35, Bedford-street, W.C. 1897.

* Address to the Electrotechnische-Verein. January 27, 1880.

terms, the cable system has no equal, and the same is true where long and steep gradients are encountered. In Chicago, New York, and San Francisco, the cable system is at its best. . . . . In the great centres of population, cable and electricity work harmoniously together as component parts of the same system, each fulfilling that portion of the service to which it is best adapted."

Full particulars are given about the welding methods of making the rails continuous, but on this point it is too early yet to give a trustworthy opinion. The theory given by Mr. McCulloch is fairly satisfactory, and explains why the apparently enormous stresses due to climatic differences of temperature do not strain the rail to its breaking limit. A very great point in favour of this way of making joints is that the total resistance of the return circuit is greatly lowered, and it is this resistance which causes electrolytic troubles in connexion with gas and water pipes. We must make special mention of the description given of the Series Parallel "K" controller. The excellent diagrams enable an electrician to understand its action at a glance. A very full account is given of the 96-ton electric locomotives which pull the trains through the Belt Line Tunnel of the Baltimore and Ohio Railway. These powerful locomotives have a starting drawbar pull of 60,000 lbs. weight and a drawbar pull of over 40,000 lbs. weight at a speed of twelve miles an hour. As these locomotives have been running for nearly two years and take all the passenger and luggage trains through the tunnel, it will be seen that heavy electric locomotives have in this case proved a success.

The chapters on motors and gearing give good accounts of the best modern practice. It seems that in America single reduction gear between the armature and the axle of the wheels of the car is almost universally employed. To have no gearing at all, but simply to have the armature directly on the axle, as in the City and South London Railway, puts too great a stress on the armature in ordinary street slow-speed work. Even where there is a smooth track and fairly high speeds are possible, direct connected armatures need continual repair. In the early days of electric traction work open double reduction gear was employed, but then the life of a pinion averaged only three months, and the life of a spur wheel about seven months. Now, with protected single reduction gear running in oil, the lives of both pinions and spur wheels have been more than doubled.

One important question that is at present receiving a great deal of attention is the question of brakes. The weight of street cars on both cable and electric systems has been greatly increased, often the empty car weighs 12,000 lbs., and when full it may weigh ten tons. In suburban districts these cars often run at fifteen or twenty miles an hour, so that very powerful brakes are an absolute necessity. In electric cars very effective electric brakes can be employed, but in addition some form of street car fender is almost universally in use.

There are one or two theoretical points on which we differ from Mr. Dawson. He says, for example, that for street railways there is no great advantage in using alternating currents, the reason being the difficulty in efficiently regulating the speed, and that "two overhead conductors," at least, would be necessary. Probably he was thinking of a three-phase system when he wrote this. The improvements in monophase motors made during the last year will make the alternating current a formidable rival to the direct current, and the ease with which the potential can be kept constant all along the line, by stationary boosting transformers, is an advantage of this system which is not to be lightly overlooked.

Complete American specifications are given for electric tramways, and that contractors actually accept those specifications shows either that the manufacture of railway plant has reached almost perfection, or that the contractors know that the consulting engineers will not be too strict in their interpretation of the specifications. There are one or two points in them that indicate the latter as being the true explanation. For example, when specifying for a motor it is stated that it must be supplied with carbon brushes which shall not spark at any load. A little lower down it says that the motors must run without dangerous sparking. The uninitiated might well imagine that a motor sparks at other places besides the brushes. Again, in specifying for a railway dynamo, it is said that its efficiency at full load shall not be less than 94·5 per cent. It is rather ridiculous to mention fractions of a per cent. in this connexion without saying how long the dynamo has been running before the readings are taken, and whether the test is made in summer or winter. Another point that makes it look as if this were a mere paper specification is this :—

"Insulation of armature conductors, field magnet conductors, and commutator shall be of such quality and workmanship as to withstand 5,000 volts alternating for half an hour."

Now they might easily withstand 5,000 volts alternating for a month, providing that the pressure was gradually switched on. If, on the other hand, it is switched on direct, the chances are all in favour of the insulation being broken down. It ought to be stated that the volts are to be gradually applied. In the same specification it is stated that the magnet coils are to be insulated with asbestos so as to be water and fire-proof. This is surely vague, as every one knows that asbestos is very far from being waterproof. in fact excellent filter papers are made out of it. If vulcabeston, *i.e.*, vulcanised india-rubber and asbestos fibre, is meant, it should surely have been stated. In the specification for a testing-room, a battery of 150 Leclanché cells is to be supplied for some purpose or other and is to be carefully and thoroughly insulated from all its surroundings. These cells seem quite unnecessary and the trouble of insulating them must be very great. It is also stated that the Kelvin reflecting galvanometer is to be differentially wound. As no one uses a differential galvanometer now, this also seems a superfluous refinement.

We were very much struck with the specification for a "closed motor-car body." A very good idea can be obtained from it of the care taken in the construction and finish of American street cars. The insides are richly ornamented, upholstered, and excellently lighted, and the care taken for the comfort of passengers is only equalled by the care taken in the drawing-room cars of our great railway companies. This is one of the points on which we in this country have a great deal to learn. Another point is, that no outside advertisements are permitted.

That electric traction in England is only in its initial stage there can now be not the slightest doubt. The Light Railway Commission is at the present moment busily employed considering schemes of electric traction from all parts of England. It is curious what an impulse to electric traction enterprise in this country has been given by the Light Railways Act of 1896. Of the numerous light railways proposed, nearly all the English lines are going to use electricity for their motive power. The proposed light railways in Scotland are nearly all worked by steam. Whether it is that caution is more developed North of the Tweed, or whether the lengths of the lines there work out in favour of steam is not quite evident. If it is for the former reason they are making a mistake, for electric roads can be designed with as much ease and with as sure a result now as horse tramways could have been designed ten years ago.

In conclusion, we would recommend Mr. Dawson's book to the attention of all municipal authorities who are considering whether to adopt electric traction or not. They will find here full particulars, both financial and mechanical, of all the various systems, and the accounts can be thoroughly relied on. The theory of electric traction is only incidentally considered, and no mathematical formulæ or discussions, such as what length of line can be worked profitably from one central station supplying at 500 volts, are given. In our opinion this distinctly adds to the value of the book, as it is a relief to come across a work where facts, and conclusions deduced from doubtful premisses, are not mixed up.

THE INFLUENCE OF MATERIAL ON ARCHITECTURE.*

BY BANISTER F. FLETCHER, A.R.I.B.A.

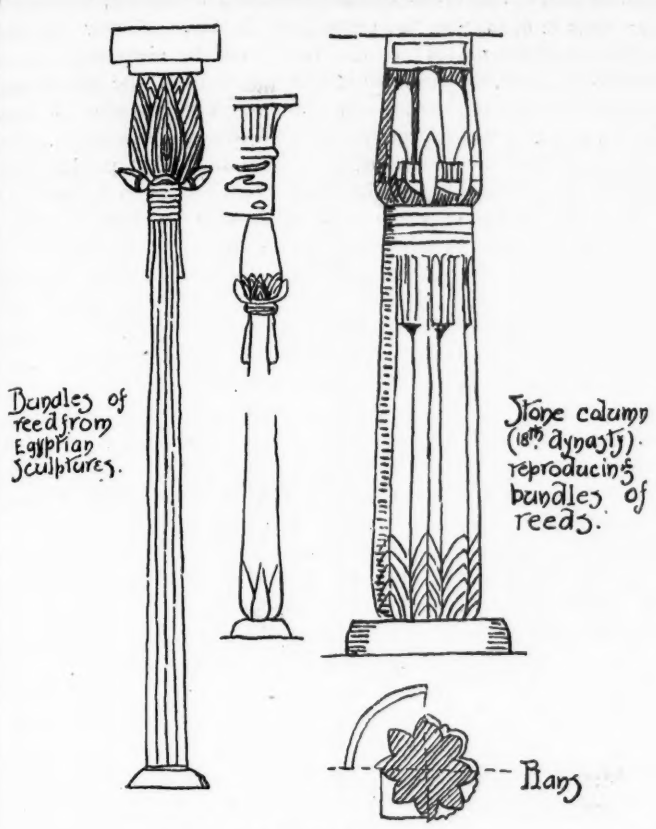
Architecture is an affair of material, the true use or needs of which mould the style, which is created out of the qualities of the materials that have to be employed.

INTRODUCTION.

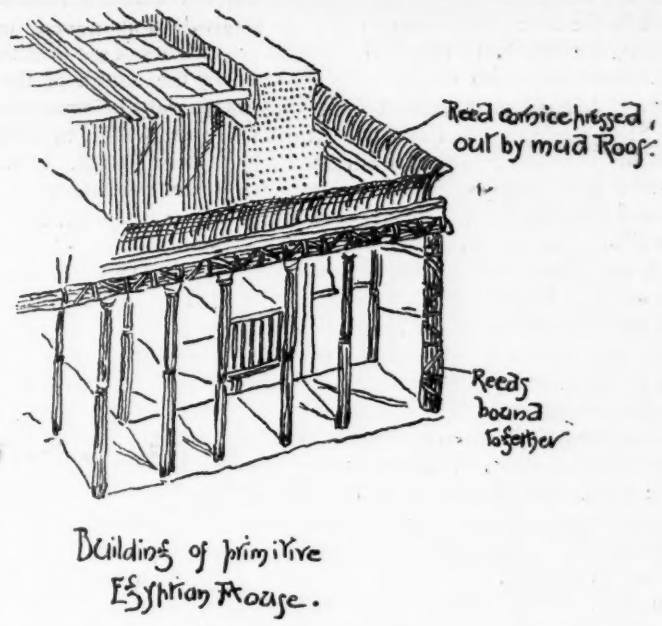
MATERIALS are the media in which architecture is expressed; they are at once the rulers and the slaves of the most abstract of the arts. Architectural idealism has to be embodied in the shapes created from inanimate Nature around us. Thus it is that, at one time, materials by their solid reality oppress the imagination, as amid the close-set columns of an Egyptian hall; while at another the successful expression of the abstract triumphs beneath the magic circle of some Byzantine dome—hanging as by a chain from Heaven,—or within some airy Gothic structure where matter seems spiritualised to a film of gossamer.

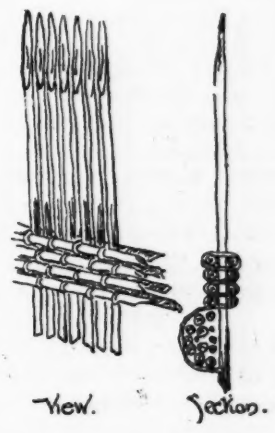
Thus the influence of materials on architecture is undoubted; for even when style is paramount we have but a proof of the vitality of the principle. Style is created by the discoveries of experience or genius out of the qualities of the materials employed. Successive periods have had their distinctive materials, of which they seem to have exhausted the possibilities, and their resulting methods of treatment are the basis of what is afterwards classified as "style." Changes of style are

* Mr. Fletcher's essay was originally written for, and obtained, the Institute of Architects' Essay Prize in 1896. We are now publishing it in full, with the illustrations, as a good résumé of an important aspect of architectural study.



Derivation of Egyptian Column from Reeds bound together.





Structure of Reeds.

forced on by the use of new materials, to which at first the old forms are applied. After a period the old forces of tradition and prejudice are laid aside, and the new forces of utility, reason, and cost draw attention to the innate qualities of the newer materials, which, finding expression, develop to a greater or less degree of perfection a new style.

The philosophy of the argument stated is that architecture is an affair of material, the true use or needs of which mould the style, and that style is created out of the qualities of the material that has to be employed. In following up this axiom, the Egyptian style will be traced, changing from a mud architecture to one of stone and granite; West Asiatic architecture, starting from mud types, developed through brickwork; the Grecian, from an archaic or early wooden type, changing in the best periods to marble; and the true architecture of Rome seen to be brickwork and concrete, a development which was continued in the Byzantine style.

The Romanesque period is one of destruction, of the re-use of Classic materials emerging after a troublous period into the Gothic style—essentially one of stone.

The Renaissance period, again, is a period of relapse—one where materials no longer forming the style, the same design is found executed in very varied materials.

In the modern period the stream of architectural development has, as it were, flowed beneath the surface in the artistically unrecognised use of iron and steel with their compounds. In tracing the influence of these great materials, it must be observed that during this period the building art has been divided by the purely constructive side disengaging itself, under the name of engineering, and thus robbing architecture of one of her most powerful incentives towards progress.

Architecture proceeds from structure, and the first condition at which it should aim is to make the outward form accord with that structure. Many constructive features offer to us a manifestation of the tendency, always existing, which consisted in transforming into a decorative feature that which previously was only a practical need. In all styles certain combinations went gradually from the domain of the art of building, to pass into that of decoration, and thus the spirit of architecture was modified insensibly.

Within the limits of an essay it is impossible to do more than trace the main stream of the great historical styles, and it is equally necessary to exclude the rival moulding forces that may be classed together in the term civilisation, not because their influence is unrecognised, but in order that the influence under consideration—the influence of material—may be fairly brought out.

Dealing with details, it will be seen that the use of plaster, glass, and mosaic has had some influence, but, perhaps, scarcely sufficient to form styles of themselves, although it would be difficult to discuss the Byzantine or Gothic periods without detailed reference to mosaic or glass respectively.

CHAPTER I.

Egypt: Mud and Reeds to Granite.

In the valley of the Nile, the land which is the gift of a great river, and the seat of the most ancient civilisation, a primitive architecture of mud or puddled clay and bundles of reeds is discovered, changing in later times to a style of stone and granite.

The primitive structure was composed of bundles of reeds bound together and placed at intervals vertically in the ground, the angle bundles being strengthened. On these reeds, and joining them at the top, were laid horizontally other bundles, which bound the heads of the uprights together. The origin of the characteristic cornice is held to be due to the pressure of the clay (of which the primitive roofs were constructed) on the upright reeds, which formed the framework of the walls. These reeds were held in position by being bound to the horizontal roll resting on the top of the columns. This formed the slightly projecting cornice, the reeds keeping the rammed clay in a projecting position and allowing the curve to be terminated by a flat fillet which gave the level of the terrace. The jambs and lintels of the doors and windows were made of reeds in the humbler dwellings and of palm trunks in those of more pretension.

Here, then, is seen a fair and likely prototype of the construction of an Egyptian wall, the forms of which are more suitable to a structure of rushes overlaid with mud or puddled clay than to one consisting of large stones. Still, an important point remains—the batter or slope which is invariably given to the walls. Viollet-le-Duc's theories as to the origin of this batter scarcely point to the influence of material, and this feature is alleged by him to have been introduced at a later stage, having been promulgated by a royal decree. He infers the custom to have been derived from the pyramids, which were found to remain undisturbed during earthquakes, while straight-sided houses were upset, owing to the centre of gravity being placed outside the wall. It seems, however, more reasonable to attribute it to a mud origin, for nothing would be more natural, in order to strengthen such buildings, than to slightly tilt the bundles of reeds towards the interior, forming as it were an arch, a treatment which in any other material scarcely seems to be feasible.

Proceeding to the internal architectural features of the style, a very distinct recollection of the primitive reeds tied together at

intervals, and crowned with the lotus bud, is found in the later granite column and capital. During the Theban kingdom especially (B.C. 5000—B.C. 2300) examples in stone of capitals and columns derived from timber and reed originals are frequent. At Beni-Hassan the pillars represent a bundle of four reeds or lotus stalks bound together near the top and bulging above the ligature, in imitation of a lotus bud, so as to form a capital. Such a pier must evidently have been originally employed in wooden architecture only, and the roof which it supports, in this instance, represents a light wooden construction having the slight slope necessary in the dry Egyptian climate.

This type of column was largely used in later Egyptian times in a more substantial lithic form, and in conjunction with the hollow-formed capital of the bell type of which the earliest example appeared in the eighteenth dynasty.

In fact, throughout, although materials changed, the forms of the early reed and clay construction were adhered to; and the endeavour of the conservative Egyptian was to reproduce in stone and granite superimposed in layers, the appearance assumed in the early reed and mud type.

The surface decoration executed on the later granite buildings apparently came from the "sgraffito" work on the earlier mud walls. The surfaces of such walls could not be modelled or carved with projections of high relief, but their flat surfaces, when plastered, provided an admirable field for decoration and for instruction through the use of hieroglyphics. The Egyptian system of decoration consisted in not contravening the form adopted, but clothing it with a kind of drapery more or less rich, which never presented a projecting outline, but contented itself with enveloping the geometric form as would an embroidered stuff, or a diapered covering.

Remarkable then as are the arts of Egypt, it is clear, that in so far as material is concerned, the spirit of criticism and logical method is wanting; and that traditional forms, hallowed by long use, were clung to and reproduced when the method of building which suggested them had been replaced by other systems. Egyptian art proceeds on an uninterrupted line or course of tradition, and when necessity dictates a change in the methods of construction, or in the materials, the immutable form is not thereby affected, but is perpetuated in spite of novel conditions. With the Egyptians the influence of materials, though evident and important, has not the radical and progressive force that has characterised the development of architecture with the more vigorous races of the west.

CHAPTER II.

Assyria: Mud to Brick or Wood to Stone.

The banks of the Tigris and Euphrates present only alluvial plains, where wood suitable for building is rare. The country, however, possesses an abundance of clay, which, being thrown into flat square moulds, beaten and compressed, and dried in the sun, gives a material which lends itself readily to a treatment consistent with its qualities. Of such a material were formed the huge platforms upon which temples and palaces were built. These immense platforms were faced with sun-dried bricks, and subsequently with kiln-burnt bricks, or in the later Assyrian period with stone slabs from the mountains that separate Assyria from Media. Here will be perceived how the salient characteristics of the architecture may be explained by the nature of the materials at hand, for the walls being of brick, each unit, in general, is a repetition of its neighbour, and rarely of special shapes. The buildings composed of them could only be decorated by attached ornament, similar in principle to the mats and hangings we spread over the floors and walls we wish to hide.

The arch now first appears on the architectural horizon as applied to openings. In some cases it is not a true arch, but one formed by corbelling or projecting horizontal courses; but, finally, the true arch was practised, being probably accidentally hit upon by the use of small units of materials, which must have had a direct influence, for the Chaldæans were unable to support the upper part of their walls, ceilings or roofs, upon beams of stone or timber, owing to the lack of these in suitable forms, and they had to devise some other means of arriving at the desired results. It is a general law, which study and comparison will confirm, that the arch was soonest discovered and most invariably employed by those builders who found themselves condemned by the geological formation of their country to the employment of the smallest units.

These arches, in the absence of piers, rested on thick and solid walls; and whether in the piercing of immense mounds by vaulted drains, or as prominently placed in the most careful and elaborate façades, the arch, forming an imposing entrance and accentuated by a brilliantly coloured soffit, held a place of extreme importance.

In Chaldæa, isolated supports, such as are found in the hypostyle halls of Egypt and Persia, or in the naves of Greek temples and Latin basilicas, were untenable; the want of suitable stone put any such arrangement out of the question. The Chaldæans and Assyrians never used stone constructively except as the envelope for a brick wall. The pillars, roofs, and constructive features of their buildings were of wood, however; but in the Persian period after the conquest of Egypt by Cambyses in about 530 B.C., Asiatic nations for the first time employed stone for pillars. The Persians especially used the material (stone) which was found in abundance in the neighbourhood of their capitals; in the rocky country of Persia, at Susa and Persepolis, only the bones of their buildings remain, the enclosing walls of brick having disappeared. It is to be remarked how these Persepolitan halls show the influence of the Assyrian wooden style in having closely spaced columns, which, although necessary in the halls of the Assyrian prototype, were not so when the columns were executed in stone and supported a light wooden roof.

The bracket and scroll capitals of the columns at Persepolis and Susa retain much of the form of their wooden prototype, and demonstrate very clearly that a form which, applied to wood, is natural and inoffensive, becomes clumsy and inappropriate when applied to stone.

In regard to architectural character, Texier's description of the great mosque at Ispahan (1587-1629) might, it is believed, be applied with general accuracy to the principal buildings of ancient Babylon, if the power of a Merlin could bring them back to our view: "Every part of the building, without exception, is covered with enamelled bricks. Their ground is blue, upon which elegant flowers and sentences taken from the Koran are traced in white. The cupola is blue decorated with shields and arabesques. One can hardly imagine the effect produced by such a building on an European accustomed to the dull uniformity of our colourless buildings." The principal difference between this and those of ancient Babylon would be that arising out of the prohibitions of the Koran, for we find that in the latter period the Assyrians either cased their walls with limestone and alabaster (an expensive and laborious system), especially in Chaldæa, where stone was too costly (in consequence of the distance it had to be carried), or faced them with a skin of glazed and coloured brickwork of many colours.

Sculpture was confined to the lower part of the walls, and placed on limestone or alabaster slabs; in the upper part the problem was solved in a similar fashion by the extensive use of enamelled brick and painted stucco, and the elaboration of a rich, elegant, and withal original system of polychromy.

At Nineveh stucco appears to have been formed by the mixing of burnt chalk with plaster, which gave a sort of white gum that adhered tightly to the clay wall. At Khorsabad an ornamentation of portions of cylinders, in juxtaposition like trunks of trees placed vertically together, was employed externally. This style of decoration is a last reminiscence, as it were, of the timber stockading which had originally served to keep up and preserve the tempered earth before the regular use of sun-dried bricks.

Before leaving Asia, it will be well to glance for a moment at the district known as Asia Minor, and note how many of the buildings present stone forms borrowed from a timber type. The influence of tradition there is manifest, and the Tombs of Lycia present this feature more strongly perhaps than any remains in Western Asia. In one example from the British Museum, above a double podium, probably even originally of stone, is placed a rectangular chest, or sarcophagus, certainly copied from a wooden form, all the mortices and framing, even to the pins that held them together, being literally rendered in the stone-work. Above is a curvilinear roof of pointed form, which also is a copy of an original in wood. In Lycia other rock-cut tombs present flat and sloping roofs, in which unhewn timbers are literally copied; and the last stage shows us an Ionic façade developed from these carpentry forms.

Copying of timber forms in stone can also be traced in Egypt; in Central Asia by the Persians; in India, where it was introduced by the Bactrian Greeks, between the second and third century B.C., and in Greece somewhat earlier than in Lycia, say in the 7th century B.C. Thus it will be seen that style created by one material does not long survive its disuse. It was only in the infancy of stone architecture that men adhered to wooden forms; as soon as habit gave them familiarity with the new material, they abandoned the incongruities of the wooden style, and all trace of the original form passed away.

CATHOLIC CHURCH, WEST KIRBY. — A new Catholic Church has just been erected at West Kirby from plans prepared by Mr. E. Kirby. The building was opened on the 18th inst.

NOTES.

The Government Water Bill.

THIS Bill passed through Committee of the House of Commons on Tuesday last without any substantial alteration. It is not likely to be affected in the House of Lords. Attempts were made by several members to give the water consumer greater opportunities of what may be called attacking the water companies, as, for example, by enabling the Railway Commissioners to reduce the water rates if the companies had failed to give a full supply; but none of these amendments were accepted by the Government. The result, therefore, of the agitation and discussion in the public press and of the promises of the Government is that we have had a superficial piece of legislation which can be of no practical advantage. It is general in its principles, and yet only applies to London, and is a mere sop to the London householder, so that he may not go on agitating for a better water supply. There never was a more wretched breakdown of policy than that of the present Government on the question of the water supply of London. It was in its power to settle on a broad and satisfactory basis the great question of the water supply of London, but it leaves it more difficult of solution.

Egypt Exploration Fund.

WE may draw attention to the fact that the Egypt Exploration Fund is establishing a separate branch with a separate subscription, under the name of the "Græco-Roman branch," to enable the Fund to deal more effectually with the remains of the period of the Greek and Roman occupation in Egypt. To architects this period is perhaps of even more interest, in some respects, than that of ancient Egypt; and it is hoped, with systematic research, to make some valuable discoveries.

Proposed Bridge at New York.

THE bridge which is about to be built over the Hudson to join Jersey City to New York is to be a really remarkable structure. The construction of a bridge having a clear span of about half a mile, and capable of carrying six lines of railway, not to mention a roadway and side walks, is an undertaking that will tax the ability of even American engineers to the utmost. Naturally, for a structure of this size only the suspension principle could be adopted, and consequently it will be somewhat similar in appearance to the Brooklyn Bridge, only the towers supporting the suspension chains or ropes will need to be about half as high again as St. Paul's Cathedral, and if, in order to realise the magnitude of the structure, we suppose for a moment one of the towers placed in St. Paul's Churchyard, then the other tower would have to be placed at the Law Courts to give the required span. We should think the cost of the bridge was under-estimated at three and a half million sterling; and although bridge building is very rapidly executed in America, yet the five years which it is said will be sufficient to complete this structure seem to us too little. The great depth to which the piers have to be taken to insure a good foundation practically prohibits the use of compressed air, and therefore it has been proposed to sink ordinary cylinders open at the top. Altogether the work promises to be of a most interesting character, and we shall watch its progress very attentively.

The Theory of the Röntgen Rays.

SINCE Professor Clerk Maxwell propounded the electro magnetic theory of light no more daring speculation in physical theory has been made than that of his successor, Professor J. J. Thomson, that the chemical atom is divisible. If this theory is correct then the transmutation of metals is a physical possibility. Professor Elihu Thomson has recently adopted this hypothesis, and has explained not only many puzzling phenomena connected with Röntgen rays by means of it, but also the dark spots on the sun's photosphere and their influence on terrestrial phenomena. The highest temperatures we can obtain in a laboratory are, comparatively speaking, low, seeing that we can assign no upper limit to temperature. Since the spectrum of even the simplest gases is complex, it seems allowable to suppose that at temperatures above those readily obtainable the chemical atom may split up into still simpler forms. All the wave motion emitted by these finer atoms, vibrating necessarily at a much higher frequency than violet light, would be invisible to the eye, and could only become visible by a phenomenon similar to fluorescence. In a Crookes's tube the velocity of the molecules of gas projected from the cathode must be very great, as they have to convey a considerable amount of energy in a short time and their mass is small. Hence the layer of gas in front of the anode must be at an extremely high temperature, and Professor E. Thomson supposes that the molecules of the gas split up, and that the vibrations of the ether set up by these simpler forms are the Röntgen rays. We hope that this theory, like Clerk Maxwell's, will survive crucial experimental tests.

Fire Protection in London.

WE have again had an effective review of the London firemen on Saturday last, but in a modern fire department other things have to be considered besides the smartness of the *personnel*. Referring to a few of the anomalies which have been recently associated with our fire service, we may call attention to the fact that there has again been a small fire at Buckingham Palace, and yet it would appear that our firemen are neither well informed as to the plan of that building, nor as to its facilities of water supply. There also does not seem to be any direct telegraphic intercommunication between the Palace and the M.F.B. headquarters. Further, we notice that the Woolwich Arsenal authorities have lately again determined that the Council Fire Brigade has no right to attend an outbreak on their premises unless by special permission. This complicated state of affairs we can only consider dangerous. On the other hand, we last week heard that the M.F.B. are withdrawing their firemen stationed at the various Government Offices, and though, no doubt, it is an advantage to a force so under-manned as the Brigade to reduce its number of "fixed duties," and thus have more men at their disposal for general work, it seems very injudicious that public property and historical documents should be risked through a makeshift of this description. It is not our purpose to here speak of the under-manning of the Brigade, of defects in its general organisation, or the fact that it is not considered the duty of the force to attend to a question of fire prevention, or to the extinguishing of fires with the minimum of water damage. We only wish to urge that where there is so much cause for complaint and so much mismanagement (owing partly to conflicting interests), it is high time to have a businesslike inquiry on the fire-protection of the Metropolis generally.

German Municipal Exhibits for the Paris Exhibition.

THE example set by Germany in respect to the exhibits of its more important municipalities at the Paris Exhibition of 1900 deserves our serious attention. On the initiative of the Local Authorities at Stuttgart, thirty-four German towns have been invited to prepare collections representative of municipal management, and their delegates are to meet at the Hygienic Congress, which is to be held at Carlsruhe in September. No less than twenty-four cities immediately consented to participate in the collection, including Berlin, Hamburg, Hanover, Dresden, Breslau, and all the localities best known for their public works. There is no doubt that if the municipal exhibits are arranged on these lines, they will prove highly instructive, and it is desirable that there should be some similar combination among our Local Authorities. As a rule it is difficult to find the various minor exhibits of this description scattered about in various galleries of a large exhibition. London might be kept distinct; but our many County Councils could well form one group, whilst the larger cities again could be classed separately from the boroughs. The sections into which the German municipal exhibits will probably be divided include groups for Public Buildings and Public Works, Parks, Gardening, and Decoration, besides Sanitation, Lighting, Transport, &c.

American Slates in England.

Two or three days ago Messrs. Luke, of Edinburgh, received the first consignment of American slates which has been landed at Leith. The importance of the incident lies in the fact that it is said to be a direct result of the strike at the Penrhyn slate quarries; a point which the Welsh slate quarrymen would do well to consider. The slates imported are what are called the "Arfon" blue slates, from Virginia. They have been used in England, chiefly in the Liverpool district (where of course there is the most direct communication with American markets), for some time, but have not before been imported into Scotland. They are said to have a good standing in America, and to have lasted well for about forty years on the buildings of the Smithsonian Institution, the Army and Navy buildings, and the Treasury, at Washington; the United States Assay Office at San Francisco, &c.

Monuments of El Kab, Egypt.

ON Tuesday, Wednesday, and Thursday a series of illustrations of the wall drawings in tombs at El Kab, Upper Egypt, have been on view at the rooms of the Society of Antiquaries; also measured drawings of the temple of Amenhetep III. (*circa* 1,400 B.C.) by Mr. Somers Clarke. These latter are the most interesting to architects of the drawings exhibited; they show a small oblong

temple divided into three aisles by four columns, two on each side, of the sixteen-sided type with abacus; but the face of each column towards the centre aisle is accentuated by a projecting carved fillet and an ornamental design, a kind of bas-relief capital, with a scroll on each side curled inwards, and remarkably resembling the inward-curling volute of a European transitional capital. A monochrome perspective drawing by Mr. J. J. Tylor, worked upon an enlarged photograph, gives a good idea of the appearance of a portion of the columns and of the usual roof-beam, in this case carved with an alternating ornament. Mr. Clarke gives also a measured plan (unfinished) of the Tombs. The sculptures in these, which are all in intaglio of the well-known Egyptian type, have been very carefully drawn and fill a number of large sheets. There were also some very interesting pictorial sketches in oil of El Kab and its environs by Sir W. B. Richmond.

The "New Bield," Lyveden.

WE read that "Farming Woods," near Brigstock, a seat of the Lords Lyveden, has just been sold.* The house, originally a forest lodge, was enlarged in 1777, by John Earl of Upper Ossory, and latterly by the first Lord Lyveden. It stands amidst the woods which represent the ancient Rockingham Forest. In a perambulation of 14th Edward I. the forest is described as stretching, for about thirty miles, from Stamford to Northampton, with an average breadth of nearly nine miles between the rivers Nene, Maidwell, and Welland. That area includes Apethorpe, Kirby, Holdenby, Kingscliffe, Weldon, Rushton, Rothwell, Geddington, and Twywell, and is closely associated with the story of the Treshams (originally of Twywell), who owned Lyveden manor in the middle of the fifteenth century. On the property we mention stands the later manor house, commonly known as the New Bield, or Building, begun, but not completed, by Sir Thomas Tresham, of Rushton, *obiit* September 11, 1605. The design is attributed, and it seems, rightly, to John Thorpe (see his drawings in the Soane Museum). The plan is that of a Greek cross, supposed to symbolise the Passion, with a five-sided bay at the end of each arm of the cross. The basement and two floors, rising to 34 ft., are of Weldon free-stone. Its demolition was attempted by Major Butler, of the Parliamentary forces, when quartered at Oundle, who took timber from it for a house in that town. The earlier manor-house, or Old Bield, was rebuilt, and, some say, also by Thorpe, in the lifetime of Sir Thomas Tresham, and finished by his second son, Lewis; between the two are the terraces and fishponds. In 1st James I, Lord Burghley was appointed master-forester of Rockingham Forest, comprising the three bailiwicks of Cliffe, Brigstock, and Rockingham. Farming Woods in Brigstock bailiwick was made separate in 4th Charles I., and the Earl of Upper Ossory was subsequently nominated master-forester thereof. On July 21, 1883, we published views with plans and details of the New Bield, the Triangular Lodge at Rushton, and Rothwell Market-house, reduced from Mr. J. A. Gotch's work upon Tresham's Buildings in Northamptonshire, 1575-1605. The last-named has since been converted for a Free Library and the District Council Office, after the designs of Messrs. Gotch & Saunders, of Kettering.

* Robert Vernon (*prius* Smith), P.C., and M.P. for Northampton, 1831-59, was elevated Lord Lyveden in 859.

Wrexham Church Tower.

WE regret to hear that this fine and well-known Mediæval church tower is in a state that will necessitate extensive repairs before long. The usual results of imbedding untreated iron in the form of cramps and dowels in the masonry have begun to show themselves, and in a worse form than usual owing to the fact that a good deal of the facing, on the south side especially, has been placed on the cant instead of on its quarry bed, and has been gradually peeling and splitting off. All but three or four of the finials to the pinnacles are much decayed, some of them so much so that it has been found necessary to point them up to secure them and prevent danger. It is to be hoped that every care will be taken to keep in repair this fine tower, without interfering with its ancient character.

New Decorative Wall Coverings.

MESSRS. HAYWARD have had on view lately some mural decorative materials of new design. The principal material is thick jute, which is made in various textures of coarseness. It is tacked to the walls and the junctions effected by means of wood strips, placed vertically. The jute is hand-coloured and treated with conventional patterns, and is comparatively cheap. We should hardly regard it as a sanitary covering for walls, however, as it must form an easy receptacle for dust. Some new designs in hand-coloured flocks, and in blocks or hand-printed papers, were on view, and in these the prevailing fashionable colours of blue and green have been incorporated by the designers, Mr. Beresford Pite, Mr. Gwatkin, and other well-known artists.

A Sundial Competition.

THE "National Sculpture Society" of the United States offers two premiums for the best and second best designs for a sundial, to be competed for under its direction, the competition designs to be exhibited in the Society's exhibition next year, and the awards made at the same time. The designs are to be in the form of plaster models, uncoloured, to a scale of one-fourth the intended size, and for a dial to be placed in the middle of a lawn, and unconnected with any building. The premiums offered are 500 and 250 dollars, or 100*l.* and 50*l.*, which sums are offered by Mr. T. Kelly of New York, whose property the two premiated designs will become, but he engages (very rightly) not to have either of them carried out save by the sculptor who designed the model. The circular announcing the competition does not state whether it is open to all sculptors, or only to Americans, but no mention being made of any restriction we presume there is none. This ought to be a very interesting competition, a sundial is so very suggestive a subject for sculptural treatment; and we may expect to see some new and picturesque suggestions evolved. The award will be made by a committee appointed by the National Sculpture Society, of which Mr. Barr Ferree, of New York, is the secretary.

CONSERVATIVE CLUB, BARROW.—A new Conservative Club is to be built in Abbey-road, Barrow, from plans prepared by Mr. J. Y. McIntosh.

THE BRITISH SCHOOL AT ATHENS.

THE annual meeting of the British School at Athens was held on Thursday last week at 22, Albemarle-street; Sir E. J. Poynter in the chair. The Report of the Managing Committee stated that in spite of recent political disturbances the School had had a very satisfactory session; the number of students had been above the average, and good work had been done both at home and in the field. The following extracts from the Report serve to record the principal work that has been done:—

"In the winter and spring the excavations begun last season on the supposed site of the gymnasium of Kynosarges, in Athens, were carried to completion, with results which the Director will describe. The cost of this undertaking, it will be remembered, has been met by funds kindly placed at the disposal of the Director by private friends. After various difficulties and delays, work was resumed in Melos, on the site of Phylakopi, early in May, and carried on energetically for four or five weeks. There is now no doubt that the remains of an important prehistoric city have been discovered, the complete excavation of which, in a subsequent session, may lead to results of first-rate interest. Particulars of the discoveries made in the past session will be given by the Director.

The School being now in a position to plan its work in advance, the Committee have had under consideration several schemes for further excavation. It would be premature to make any definite announcement at present, but the Committee would wish subscribers to understand that in their judgment this is one of the most, if not the most, important branch of the school's operations. Not only is the actual work of surpassing value and interest to those who take part in it, but the material thus collected affords abundant opportunity for subsequent research. Thus already the discoveries made in excavating the site of Kynosarges and in Melos have yielded enough to occupy students of pottery, of sculpture, and of inscriptions, for some time to come, while the site of Phylakopi offers in itself a fascinating problem for the student of prehistoric civilisation in the Levant.

This subject leads naturally to that of the 'School Annual.' Last year's issue, which was admittedly tentative, contained, besides the usual reports and accounts, only a few papers on travel and research of a slighter character than would be admitted into the 'Journal of Hellenic Studies.' The number recently issued, however, contains also certain papers which may be regarded as permanent contributions to archæology or to history. Two of these were contributed by well-known scholars who became Associates of the School, and were good enough to make this acknowledgment of the privilege. Others were first-fruits of the abundant material supplied by the recent excavations in Melos. The fuller results of these and other excavations will be published, as opportunity offers, in the 'Journal of Hellenic Studies.' . . .

The special leave of absence granted by the Trustees of the British Museum to Mr. Cecil Smith, to enable him to act as Director of the School for two sessions, has now unhappily expired, to the regret of all friends of the School. It has therefore been necessary to look for a new Director. The Committee have been fortunate enough to secure, for three years at any rate, the services of Mr. D. G. Hogarth, Fellow of Magdalen College, Oxford, a former student of the School, and well known as an explorer in Asia Minor and Egypt. On his retirement from the post which he has filled with so much energy and success, the Committee desire to tender their best thanks to Mr. Smith for his devoted service. . . .

Mr. George Macmillan, who has acted as Honorary Secretary of the School since it was first opened in 1886, has found himself reluctantly obliged, by increasing engagements, to resign the office at the end of the current session, though still willing to serve upon the Committee. Mr. William Loring, one of the most distinguished students of the School, and also a member of the Committee since 1895, has consented to take up the work, and is to-day nominated for election as Hon. Secretary for the ensuing session.

Turning to the financial position, the Committee has first to announce that the Government grant of 500*l.* a year for five years was duly ratified by the House of Commons before the end of last session, and the first instalment having been received the finances may now be regarded as on their normal basis. The Hellenic Society have renewed for a further period of three years their annual grant of 100*l.* a year. The total result of the year has been an addition to the funds of nearly 220*l.*; but this surplus is more apparent than real. The subscriptions to the Building Fund reached the sum of 1,074*l.* 18s. 6d. This, though less than what was asked for, was sufficient to justify the Committee in proceeding with the building, and has been already spent, within a few pounds, in payments on account of the contract. The final amount due on this head cannot be yet ascertained, but it is anticipated that, with the inevitable 'extras,' the surplus of 220*l.* will be fully swallowed up, so that this addition to

the funds is merely temporary. . . . . The main difficulty is still on the financial side. So long as the School has no permanent endowment it cannot enjoy entire freedom of action; the question of ways and means must continually interfere with its operations. For three years, at any rate, it can hold its own, though even during that period it could make good use of another two or three hundred pounds a year. But it must not be forgotten that the outlook beyond that period is uncertain, and that there is still an opening for the generous benefactor or benefactors who might, by a substantial gift, place the managers of an institution which has far more than justified its existence beyond any fear of financial anxiety."

The Chairman moved the adoption of the report, which was seconded by Mr. Percy Gardner, who spoke strongly in appreciation of the value of Mr. G. A. Macmillan's services as Hon. Secretary.

The retiring director, Mr. Cecil Smith, then gave a long and interesting account of the work of the school during the past year, and a number of photographs were handed round of some of the remains of structures and some of the objects discovered at Patras, which included a statuette of Athene of the third century B.C., with a portion of the shield left and ornamented with small bas-relief figures; also a very curious archaic bronze statuette of very early date, and perhaps the earliest known example in which some attempt had been made to produce a pose by the position and action of the hands. Mr. Smith referred with regret to the difficulties put in the way of further work by the new law in regard to excavations, according to which the ground must be purchased outright before any investigations could be made on it to discover whether or not it probably contained antiquities; and after this whatever was found became the property of the Greek Government. It seems evident that such a regulation must be a serious check to excavating, unless where the excavators can risk money freely.

Dr. Waldstein moved the re-election of the officers and Committee, which was seconded by Mr. Statham, who took the opportunity of expressing the hope that the investigation of architectural detail would not be neglected amid the more fascinating pursuit of ancient sculpture and vase-paintings. Thanks were also voted to the Chairman and to the Director. The meeting was largely attended, and great interest was manifested in the proceedings.

MAGAZINES AND REVIEWS.

THE *Quarterly Review* contains an article on "Asia Minor Re-discovered," treating of recent discoveries and future possibilities. Referring to Wood's discovery of the Temple at Ephesus, the *Quarterly Review* observes that "every Englishman must blush to see the present state of the site; huge blocks lie everywhere in confusion, as Wood left them, and since then a rank vegetation has asserted its sway." It is indeed something like a national disgrace, after the commencement of the work was made, with such splendid results as far as it went, by the resolute perseverance and determination of one Englishman, that it should be left half done. Can the Government of this country not spare sufficient funds to complete such a work?

The *Edinburgh Review* contains an article which may interest our astronomical readers, on "Two Recent Astronomers," Airy and Adams—two very strangely contrasted reputations. The article serves to renew the regret which all who are jealous of England's scientific honour must feel, that owing to Adams's almost sublime self-abnegation and the indifference of other persons, England's prior place in the discovery of the planet Neptune was never properly established, as it might have been.

The issues for July of the *Revue Générale* and *The Artist* did not reach us till after the publication of our usual review of the magazines of the month, which we regret the more in the case of the *Revue*, since it contains an article (by M. Ernest Périer) on "Art en Belgique," dealing mainly with architecture, and accompanied by eight illustrations, a new feature in this excellent French monthly. We can only now briefly draw attention to the article. *The Artist* for July is a "Special Nature Number," dealing with the treatment of animals, birds, and flowers in painting, with a number of illustrations of drawings by various artists, including some by Mr. Ruskin.

THE LONDON COUNTY COUNCIL.

THE usual weekly meeting of this Council was held on Tuesday in the County Hall, Spring-gardens, Dr. W. J. Collins, Chairman, presiding.

Chairman's Annual Address.—The Chairman delivered the annual review of the Council's work for the year ended March 31 last, from which we take the following passages:—

"The report of the Bridges Committee is chiefly concerned with the successful completion of the Blackwall Tunnel. Mr. Bull and his colleagues are to be congratulated upon the manner in which their labours have triumphed over difficulties incident to so novel and vast an undertaking. The contractors, Messrs. Pearson, are justly proud of their achievement, while the Council cannot fail to admire the engineering audacity which conceived the construction of so large a tunnel in so treacherous a bed, and rejoice with Sir Alexander Binnie and his staff at the success which has crowned their work. The experience gained at Blackwall led the Committee to recommend and the Council to approve another tunnel beneath the Thames between Greenwich and Millwall for pedestrian traffice only, with an external diameter of 12 ft. 9 in. at an estimated cost of 70,500*l.* The returns from Woolwich Ferry which, during the years 1890 to 1893, indicated some reduction in the number of passengers, again show an increase, nearly 4½ million persons having used the free ferry in 1896, while the vehicular traffic shows a progressive increase from the first. Another year's experience of the consolidated Building Act of 1894, which repealed eight previous Acts and portions of seven others, has convinced the Building Act Committee that a vast improvement has been affected, while it is not surprising that a statute consisting of 218 clauses and four schedules should have been found imperfect in some particulars. Four thousand and thirty-two dangerous structures were dealt with last year; in 742 cases summonses were issued, of these 445 were withdrawn on the necessary work being executed by the owners, 295 resulted in magistrates' orders, and in only two instances were the summonses dismissed One hundred and sixty-five factories were inspected under the Factory and Workshop Act, 1891, with a view to ascertain whether adequate provision existed for escape in case of fire, and in sixty-five cases requirements were served upon owners to carry out the necessary alterations. The number of sky-signs is rapidly diminishing under the operation of the Act of 1891; of the 120 which remain licensed for a third extension period of two years, the majority must be removed before the close of this year. . . . . The Housing Committee reports good progress with the erection of new dwellings and central laundry and laying out of a garden at Boundary-street, Bethnal Green, on the insanitary area cleared by the Council under Part I. of the Housing Act of 1890. Among other schemes dealt with, it is satisfactory to note that Bills confirming provisional orders for clearances at Clare-market, Strand, and Church-way, St. Pancras, have at length been passed. The working-class dwellings erected by the Council in connexion with the Blackwall Tunnel scheme are fully occupied. The annual statement of accounts in reference to the Council's model lodging-house at Parker-street, Drury Lane, shows a considerable profit has been realised at a charge of 6d. per bed per night. The Improvements Committee, under the chairmanship of Colonel Probyn, has an unusually full report. Although the Committee withdrew their proposal for a new street from Holborn to the Strand, they succeeded in carrying through the Council eight improvement schemes, for which the Council seeks parliamentary powers, at an estimated net cost of more than a million and a quarter, together with some forty local improvements, to which the Council will contribute another quarter of a million. Perhaps it was this plethora of improvements, which led the Council to instruct the Committee in future to bring up an annual budget of proposed improvements, together with some comparative regulation over its capital and annual expenditure in this regard. It remains yet to be seen how far the standing order of the House of Lords in reference to the area over which an improvement charge is leviable, made since the betterment clauses in regard to the southern approach to the Tower-bridge became law, will affect the cost of street improvements. Before another year or so is past Londoners may expect to find the excrescences of Holywell-street and Boziers-court conspicious by their absence. . . . . The figures reported by the Main Drainage Committee, of which Mr. Cornwall was chairman, indicate the vastness of the operations over which they preside. Last year 77,185 million gallons of sewage were dealt with at Barking and Crossness, yielding, after precipitation, 2,184,625 tons of sludge, which were taken to sea in six vessels, making 2,000 trips, and discharged at Barrow deep. It is reassuring to learn that dredgings made at that spot showed no indication of sewage pollution. The Committee give reasons for thinking that physical means of dealing with sewage may be of even greater importance than chemical methods to which have been ascribed results so influential in improving the quality of the Thames water at Barking by rendering the effluent innocuous. The Committee are pursuing their investigations into the filtration of sewage, and the remarkable effects of this process in reducing oxidisable organic matter, as well as into the more difficult question as to how far chemical means may be abandoned in favour of improved methods of settlement and decantation. The Parks Committee now exercises the Council's control over seventy-nine open spaces, with an acreage of 3,685, as against forty such spaces, with an acreage of 2,656, inherited from our predecessors. It has, under Mr. Torrance's chairmanship, continued its most beneficent survey of London with a view to further acquisitions as opportunity arises to satisfy existing or prospective needs. The Council has during the past year assisted in the acquisition of recreation grounds in poor and crowded districts at Bermondsey, Walworth, Hoxton, and Islington. In the out-lying and more favoured districts of Hampstead and Sydenham open spaces which were threatened have been preserved, in view of the approach of bricks and mortar, and no doubt wisely. One could wish that the natural boundary of our county should be a belt of green spaces, providing ample ramparts of fresh air. Misapprehension of the Committee's intentions in regard to works on Hampstead Heath, has, I trust, been allayed. Not a ruthless vandalism but an æsthetic solicitude has prompted the Committee to plant for the future so as to preserve the picturesque of the present; while it has tended the gorse with a reverence worthy of Linnæus. . . . . The report of the Parliamentary Committee, under the continuing and very capable chairmanship of Mr. McKinnon Wood, deals mostly with Water Bills. It records the fate of the Government Metropolitan Water Board Bill, which passed the Lords, but was not proceeded with in the Commons. The Bills of the water companies which were before Parliament last session contained proposals for raising an aggregate 4,300,000*l.* additional capital. They were petitioned against by the Council, and referred to a Parliamentary Committee. Ultimately the capital powers granted by Parliament amounted to 1,930,000*l.* The Select Committee to which the companies' Bills were referred, put on record the following important opinion, from which few would be found to dissent. They stated that 'the present position of the London water supply is not in accordance with the public interest,' since 'under the conditions of issuing new capital, now invariably approved by Parliament for the London water companies, the public is steadily acquiring an interest which tends to weaken the enterprise of the companies as private concerns, whilst, on the other hand, the consumer is left without that care of his interests which is ensured by placing the supply under a representative body in whose election he is personally interested.' One mode of escape from this anomalous and unsatisfactory dilemma was offered by the Water Purchase Bills promoted by the Council; these Bills, however, were opposed on second reading in the House of Commons by the President of the Local Government Board on behalf of the Government, and rejected by 258 votes to 123. The alternative procedure indicated on that occasion by the Government was the appointment of a small Royal Commission, and the introduction of a Bill intended to give some further powers of complaint to aggrieved water consumers. . . . . The Council cannot be accused of undue precipitation in applying to Parliament for the necessary powers to carry out the scheme of the chief engineer, endorsed by the Water Committee, for bringing from the hills of Wales an uncontaminated and ample supply of soft water to augment the future needs of London. Now that Sir Benjamin Baker and Mr. Deacon have practically confirmed the conclusions of our engineer, progress will doubtless be accelerated in view of the admission on all sides that further delay may be perilous to the health and interest of the metropolis. A wide diversity in reports of analysts on the amount of suspended matter in water supplied by the various companies led the Committee to instruct the chemist to continue his investigations by micro-filtration. While it is difficult to assess the relative merits of chemical and bacteriological analyses as determining the potability of any water, presumption in favour of one from an uncontaminated source, as against one 'initially polluted, and subsequently more or less purified,' may perhaps be justified on stronger grounds than sentimental prejudice. Owing doubtless to recent events, I have not as yet received the report for 1896-7 of the Works Committee. As the department has recently been the subject of inquiry by a special committee and of considerable discussion in the Council there is less need for detailed notice. Fictitious entries in the books of the department were last autumn discovered by the comptroller in the ordinary course of his audit. The officers concerned were punished by immediate dismissal. Mr. Waterhouse states that 'these entries had no reference to any misappropriation of moneys, nor did they conceal any action whereby any employee of the department was pecuniarily advantaged.' The Technical Education Board continues under the tactful guidance of Mr. Sidney Webb, and now meets at its new offices at St. Martin's-place. Last year the Board spent 115,532*l.*, the bulk of which sum was devoted to grants to about 100 institutions giving approved technical instruction and subject to inspec-

tion by the science and art advisers of the Board. A central school of arts and crafts was opened last November in Regent-street. It is the first attempt made by the Board to supply technical instruction directly under its own management. Besides technical drawing and design, classes are here held in stained glass work, lead work, enamelling, bookbinding, colour-printing and heraldic drawing. A sum of 21,405*l.* was last year absorbed by scholarships. In addition to the usual junior, intermediate, and senior county scholarships the Board has instituted a scholarship in sanitary science tenable at the Council's laboratory at Claybury, and has initiated scholarships in horticulture. . . . Last December a conference was held with the representatives of various bodies interested in the preservation of buildings of historic and architectural interest, of which London has so many, but of whose existence we sometimes hear only at the moment at which their destruction is threatened. If by preparing a register of such buildings or otherwise the Council can assist in checking such needless vandalism, it will be acting in a worthy and civic spirit. I have now briefly reviewed some of the work which has occupied your attention during the past year. If I have not alluded more particularly to the Council's staff it is because I feel that words are poor things in which to record the ungrudging zeal of which you and I are daily the witnesses. London is worthily served by men who are worthy of her service. In concluding, I would take this opportunity of thanking honourable councillors for the invariable courtesy and kindness of which I have been the recipient since I was elected to this most honourable chair. The Council's work is so vast and varied, its influence has been felt so deeply that it seems almost incredible that our body is but eight years old. In that time much has been accomplished, some progress has been made. Of course there have been failures, for the Council has the defects of its qualities. The long-delayed and overdue municipalisation of London generated an impetuosity which perhaps attempted more than could be immediately achieved, but the ideals aimed at have been lofty ones. Those ideals were justly recognised and formulated in the gracious reply to the first address this Council has presented in person to the Sovereign on the Throne in these words.—"Ever to strive to further advance the welfare of the vast population of the metropolis, and do all that lies in our power to keep London worthy of its place as the capital of the Empire."

Loans.—On the recommendation of the Finance Committee it was agreed to lend the Battersea Vestry 1,280*l.* for the erection of gas engine and machinery at their workshops; the St. George's (Hanover-square) Vestry 12,000*l.* for wood-paving; the Lambeth Vestry 22,000*l.* for wood-paving work in Acre-lane, Atlantic, Hercules, Lambeth, and Norwood roads; the Hammersmith Vestry 20,170*l.* for street and bridge improvements and wood-paving works; the Deptford Baths Commissioners 7,195*l.* towards the cost of erecting baths and washhouses; the Shoreditch Vestry 10,000*l.* for erecting baths and washhouses; and the Woolwich Local Board 9,350*l.* towards the cost of constructing an underground convenience, and for carrying out certain paving works.

The Works Department.—The General Purposes Committee submitted a report containing a number of standing orders, rendered necessary by the "inferential" abolition of the Works Committee. The Committee reported as follows:—

The Works Committee having by the resolution of the Council of June 28 been inferentially abolished, we recommend—

(*a*) That the resolution of the Council of March 9 last appointing the Works Committee be rescinded. (*b*) That the resolution of the Council of March 9 last—"that the orders of reference to the various committees do stand as at present" be rescinded, so far as it affects the order of reference to the Works Committee. (*c*) That in place of the order of reference to the Works Committee, and of standing orders thereunder Nos. 322, 324, 325, 326, 327, 350, the following be substituted, and that standing orders 318, 319, 320, 323 be revoked—1. All works ordered by the Council to be carried out without the intervention of a contractor shall, unless in any case otherwise ordered, in future be carried out by the manager of the Works Department, who shall be responsible to the executive committee in the same way as a contractor would be. The Finance Committee shall have control of the finances of the department. Any Committee contemplating the execution of any work shall, before coming to a decision as to how the work shall be carried out, obtain an estimate from the proper officer. When the estimate is received, if the Committee should then decide to recommend the Council to have the work carried out without the intervention of a contractor, they shall, before reporting to the Council, refer such estimate, together with full plans and specifications, to the manager of the Works Department for his examination and report. 2. The manager shall, subject to supervision by the Establishment Committee as regards officials appointed by the Council, have the control of the staff exclusively employed in connexion with the works of construction, repair, and maintenance undertaken by the Works Department. 3. The manager shall, unless in any case otherwise ordered, carry out jobbing works and repairs, including the work of the erection of hoardings, fans, and shoring. 4. All works referred to the manager to carry out, for which bills of quantities and, where necessary, complete specifications and drawings are not supplied, shall be considered as jobbing works. No committee, however, shall order a work to be carried out as a jobbing work unless it is satisfied that there is sufficient reason for not treating the work in question as an estimated work, and except as regards dangerous structure work and works undertaken on emergency, in every instance the Committee shall have laid before it by the engineer, architect, or other certifying officer, as the case may be, a rough estimate of the cost. A schedule of prices agreed upon between the manager of the Works Department and the architect and engineer, upon which in respect of jobbing works the estimates, measurements, and certificates of the architect, engineer, or other certifying officer shall be based, shall be revised periodically. 5. The officer under whose supervision the work has been carried out by the manager of the Works Department, shall certify, as in the case of the contractor, as to the satisfactory completion of the work and the amount of his final estimate, or the value on the schedule of prices, as the case may be. . . . . 9. The head of the Works Department is to be styled "manager of works," and is to be responsible, unless in any case it is otherwise ordered, for the execution of all works executed on behalf of the Council without the intervention of a contractor; he is also to be responsible under the Finance Committee for advising as to the purchase of plant and material, the employment and supervision of all officers and workmen in his department or employed on works, and the care, regulation, and direction of all workshops and depots connected with the Works Department including the central works; and is also to be responsible to the Finance Committee for the custody, issue, and use of all plant, materials, and stores purchased in connexion with works executed; and, in addition to the other conditions on which he holds his appointment, he is to give his whole time to the duties of his office, and is not to take any private business; and any fees received by him either as a witness or in any other capacity, and any discount or allowance on materials purchased are to be paid to the Council; and, further, on retirement, he shall not be entitled and shall not make any claim to any retiring allowance under the Superannuations Act, 1866, and he shall be subject to the Council's regulations in respect of a superannuation and provident fund. 10. The accounts of the cost of all works executed by the Works Department shall be kept by a Works accountant, whose office shall be at the Works Department, Belvedere-road, but who shall report direct and be responsible to the Finance Committee for the accounts and for his staff. 11. When the Council shall have resolved to execute any works without the intervention of a contractor, or shall have resolved, on the recommendation of the Finance Committee, to purchase any machinery, plant, or materials for stock, and shall have passed the necessary estimate of the cost of such works or such purchase, the Finance Committee shall have power to contract, on behalf of the Council, for the supply of machinery, plant, and material. 12. The manager shall report to the Finance Committee with regard to the purchase of materials, stores, plant, timber, machinery, horses, and other things required by him for the execution of any work, or to be kept in stock at the Central yard. 13. All questions arising between the manager and the Works accountant as to charges to be made in respect to transfers of materials, use of plant, handling, establishment expenses, stores, &c., &c, shall be decided by the Finance Committee. 14. It shall be the duty of the manager to draw the attention of the executive committee to any case in which, during the execution of any work, it appears that the cost of the work will exceed the amount authorised, and to obtain such authority from that committee as may be required. 15. It shall be the duty of the comptroller to advise the Finance Committee as to the regulations for the accounts of the Works Department and from time to time to make test audits of such accounts, reporting thereon to the Finance Committee. 16. The Works accountant shall be required to furnish the manager with any statement or information he may desire as to the accounts generally of the works carried out by the Department. 17. The regulations of the Finance Committee shall provide for separate accounts being kept of the cost of each work executed. 18. The actual cost and final estimate of a work shall be ascertained as soon as possible after completion of the work, and shall be forthwith laid before the executive committee and Finance Committee. 19. Statements showing the estimated and actual cost of the works executed up to September 30 and March 31, and reported to the executive committees concerned, shall be presented by the Finance Committee to the Council within three months of the aforesaid dates. Any report which an executive committee may desire to make to the Council shall be brought up to the Council at the same time as the statement submitted by the Finance Committee, and the Finance Committee shall, at the same time, if necessary, make such observations as to the general finances of the Works Department as may appear desirable. 20. When there has been an original estimate of cost, such statements shall show (*a*) the amount of the estimate, (*b*) the amount of the final estimate if the original estimate has been amended by reason of certified additions or deductions, and (*c*) the amount of the certified actual cost of each work executed. 21. In the case of jobbing works, which for this purpose are defined to be works in respect of which bills of quantities, complete specifications, and drawings have not been supplied, the accounts shall show (*a*) the schedule value ascertained in accordance with the schedule of prices, and (*b*) the certified actual cost, and shall be presented to the executive committee concerned from time to time as the works are completed, the totals being subsequently reported to the Council at the same time as the half-yearly statements referred to in paragraph 19. 22. A separate statement, showing as regards all works executed by the Works Department since its creation, the totals of the actual cost, and of the final estimates, or the amount of the schedule value of such works, as the case may be, shall be presented by the Finance Committee to the Council with each half-yearly statement, referred to in paragraph 19. 23. In the case of any work the actual cost of which has exceeded the original estimate, or the final estimate, as the case may be, the executive committee shall obtain the approval of the Council to the amount of the excess.

In view of the Finance Committee having in future the control of the finances of the Works Department, an addition to the order of reference of that Committee will be necessary. We recommend—"(*d*) That the following addition be made to the order of reference to the Finance Committee—The financial control of the Works Department, and the supervision of the purchase of materials, plant, horses, &c., required for works carried out by the Works Department and of the accounts connected with such works, and the making of the necessary regulations with regard thereto, and reporting the same to the Council."

Under standing order No. 189, the list of the rates of wages and the hours of labour to be paid and observed by the Council in works which are in the nature of construction or manufacture, and which the Council may resolve to carry out without the intervention of a contractor, is to be settled by the Council on the recommendation of the Works Committee. We recommend—"(*e*) That the word 'Finance' be substituted for the word 'Works' in the second paragraph of standing order No. 189."

In the course of a discussion on the report, Mr. Henry Clarke said there were reasons why the London County Council could never succeed in employing labour in the building trade; but, granting that it were not so, the proposition placed before the Council by the General Purposes Committee was the best, and he hoped that members would give the new experiment a fair chance.

Upon the first recommendation a long discussion as to details ensued. None of these questions involved matters of public policy, and the recommendations were agreed to, the Chairman of the Committee, Mr. Beachcroft, remarking that the arrangement was of a temporary character.

Proposed Tramway along the Embankment.—The report of the Highways Committee contained the following recommendations, which were, after discussion, agreed to:—

"(*a*) That the standing order No. 289, as to the period at which schemes requiring Parliamentary sanction shall be submitted to the Council, be suspended in order that the following recommendations (*b*) and (*c*) may be considered:—(*b*) That the Council do seek power in the next session of Parliament for the construction of a tramway from the existing termini of the London and South London Tramways Companies at Westminster Bridge-road, along the centre of Westminster Bridge, and the whole of the Victoria Embankment to Blackfriars Bridge. (*c*) That the Parliamentary Committee be instructed to take the necessary measures for giving effect to this resolution."

The Water Question.—The discussion was resumed on the report of the Water Committee, proposing a series of resolutions, which they asked the Council to adopt as a guide to the Council's witnesses before the Royal Commission on the London Water Supply.

The first resolution was: "That in the opinion of the Council the water supply of the metropolis should not continue in the hands of private companies."

Dr. Longstaff moved an amendment, discussion on which was begun last week, to make the recommendation read: "That, in the opinion of the Council, the water supply of the metropolis should not continue wholly in the hands of private companies, but should be under effective public control."

Dr. White seconded the amendment.

Mr. McDougall desired to make a personal explanation regarding a statement he had made last week as to an alleged contamination of water in the Thames near Goring. The water at this spot had since been examined by the chemist to the Thames Conservancy, and had been found to contain no sewage or mineral contamination. The discolouration which was present was due to certain water plants, and would disappear before the water reached the intakes of the London water companies.

Upon a division being called, the Moderates declined to appoint tellers, and the amendment dropped, the Committee's recommendation being then adopted.

The next resolution submitted by the Committee was:—"That in the opinion of the Council the undertakings of the Metropolitan water companies should forthwith be purchased at the fair and reasonable value of the same, regard being had to the rights, special circumstances, and obligations of the companies."

Mr. Porter moved, and Mr. E. White seconded, a further amendment, proposing that, since the purchase of the water companies' undertakings would probably increase the cost of water to the public, the Council should not pronounce an opinion in favour of such purchase pending inquiry by the Royal Commission.

Mr. Lawson opposed the amendment.

At seven o'clock the debate was adjourned until next week.

Charing Cross Bridge.—Replying to Mr. Westacott, Mr. Payne, Chairman of the Building Act Committee, said, with reference to Charing Cross Bridge, that a portion of ironwork had fallen on the public way, causing much alarm. In an ordinary case it would have been sufficient to communicate with the railway company, but this was not an ordinary case, and a notice had therefore been posted.

The Council adjourned soon after seven o'clock.

APPLICATIONS UNDER THE 1894 LONDON BUILDING ACT.

AT the meeting of the London County Council on Tuesday, the Building Act Committee reported that they had considered the undermentioned applications under the London Building Act, 1894, and had arrived at the following decisions. Those applications which have been agreed to are granted on certain conditions:—

Lines of Frontage.

Brixton.†—That consent be given to the erection of a new building on the site of a house with yard at rear on the west side of Carlton-grove, Brixton Rise, to abut upon Brighton-terrace, on the application of Messrs. Wylson & Long on behalf of Mr. Burney.

St. George-in-the-East.—That consent be given to the erection of three open iron foot-bridges across Backchurch-lane, to connect warehouses on the east and west sides of that street, on the application of Mr. E. A. B. Crockett on behalf of Brown & Eagle, Limited.

Greenwich.—That consent be given to the rebuilding of the "White Horse" public-house, No. 704, Woolwich-lower-road, Charlton, at the corner of Thomas-street, on the application of Messrs. Watney & Co.

Westminster.—That consent be given to the erection of a wood and glass pent-roof in front of offices at the rear of No. 81, Page-street, on the application of Mr. J. S. Brown.

Hampstead.—That consent be not given to the erection of a projecting wooden shop-cornice, balcony, and balustrade to a detached house with shop on the west side of Southend-road, to abut upon Heathurst-road, on the application of Mr. F. J. Potter on behalf of Mr. W. Rumbold.

City of London.—That consent be not given to the erection of four three-story oriel windows in front of a proposed new building on the site of Nos. 76, 77, 78, and 79, St. Paul's Churchyard, on the application of Mr. B. Fletcher on behalf of Messrs. J. Spence & Co.

Dulwich.—That consent be not given to the erection of four one-story shops on the south-east side of Half-moon-lane, Herne Hill, adjoining the Half-moon Hotel, on the application of Mr. G. W. Riley.

Hackney, North.—That consent be not given to the erection of a one-story surgery at the rear of No. 183, Evering-road, Stoke Newington, to abut upon Brooke-road, on the application of Mr. G. E. Withers on behalf of Dr. G. A. Raverty and the trustees of Mr. E. Withers (deceased).

Paddington, South.—That consent be not given to a wood and glass verandah erected upon the porch at No. 27, Inverness-terrace, on the application of Messrs. Maple & Co. on behalf of Mr. Alderman Halse.

Strand.—That consent be not given to the erection of a glass and iron shelter at the entrance to Nos. 51 and 52, Haymarket, St. James's, on the application of Mr. W. A. Burr on behalf of Mr. E. Kirk.

Strand.—That consent be not given to the erection of a glass and iron shelter at the principal entrance to Nos. 36, 37, 38, and 39, Savile-row, St. James's, on the application of Messrs. Henry Poole & Co.

Width of Way.

City of London.—That consent be given to the erection of a building on the site of Nos. 43 and 43A, Fetter-lane, to abut also upon Dean-street, on the further application of Mr J. F. Bell.

Limehouse.—That consent be given to the erection of a building on the west side of New Gravel-lane, upon part of the site of Brewers'-court, on the application of Mr. S. Witherington on behalf of the New Phœnix Brewery, Limited.

Norwood.—That consent be given to the erection of a one-story addition to stables at the rear of No. 219, Gipsy-road, Lower Norwood, at less than the prescribed distance from the centre of a way leading out of Hamilton-road, on the application of Messrs. Marshall & Nelson on behalf of Dr. J. S. Sharman.

Walworth.†—That consent be not given to the widening of a portion of the passageway between Nos. 144 and 146, Trafalgar-street, and leading from that street into Wooler- (formerly Webb) street, on the application of Mr. R. Dickins on behalf of Lord Llangattock.

Limehouse.—That consent be not given to the erection of a pumping-station on the north side of Narrow-street, on the application of Mr. J. W. Barry on behalf of the North Metropolitan Railway and Canal Company.

Line of Fronts and Width of Way.

Kensington, South.—That consent be given to the erection of a block of residential flats on the site of Nos. 41, 43, and 45, Drayton Gardens and Vine Cottage, Thistle-Grove-lane, on the application of Mr. J. Norton on behalf of Mr. T. Boyce.

St. Pancras, East.—That consent be given to the erection of a three-story bay window in front of No. 318, Camden-road, and the erection of two-story stables at the rear of that house to abut upon Camden-mews, on the application of Messrs. Meakin & Son on behalf of Mr. H. Sams.

Wandsworth.—That consent be given to the frontage of a two-story addition in course of erection at a laundry building on the south side of Putney Bridge-road, and at less than the prescribed distance from the centre of Oxford-road, on the application, further considered, of Mr. R. Aviss.

Brixton.—That consent be not given to the erection of an addition to No. 16, Coldharbour-lane, on the application of Mr. J. T. Holmes on behalf of Mr. H. Wood.

Peckham.—That consent be not given to the erection of a one-story addition in front of the "Eton Arms" beer-house, No. 27, Lower Park-road, Camberwell, on the application of Mr. T. W. Moss on behalf of the Winchester Brewery Company, Limited.

Peckham.—That consent be not given to the rebuilding of the "Nun's Head" tavern, Nunhead-green, at its junction with Scylla-road, on the application of Mr. G. E. Neild on behalf of Mr. W. Lable.

St. George, Hanover-square.—That consent be not given to the erection of a one-story addition to stables at No. 197, Eaton-place, to abut upon Eaton-terrace Mews, on the application of Mr. B. Slade on behalf of Mrs. Grant Watson.

Line of Fronts and Temporary Building.

Brixton.—That consent be given to the erection of a temporary wooden bar on part of the forecourt of the "Hope" beer-shop, No. 46, Church-road, on the application of Mr. J. C. Jackson.

Width of Way and Temporary Building.

Westminster.†—That consent be not given to the construction and erection of temporary wood and iron stores, offices and a workshop, on the east side of Morpeth-terrace at its junction with Francis-street, on the application of Mr. G. Baines on behalf of Mr. G. Martin.

Open Space about Buildings.

Lambeth, North.—That the Council do, in the exercise of its powers under section 41 (1) (vi.) of the London Building Act, 1894, allow a modification of the provisions of that section with regard to open spaces about buildings, so far as relates to the proposed erection of a block of residential flats, with shops on the ground floor, on the west side of Kennington-road adjoining No. 4, with an irregular space at the rear of the new block as shown upon the plan submitted with the application of Mr. J. E. Lamerton.

Stepney.—That the Council do, in the exercise of its powers under section 41 (1) (vi.) of the London Building Act, 1894, allow a modification of the provisions of that section with regard to open spaces about buildings, so far as relates to the proposed erection of a house with shop on the ground-floor on the north side of Pelham-street at the corner of Hunt-street, Mile End New Town, with an irregular space at the rear, as shown upon the plan submitted with the application of Messrs. Davis Bros.

Width of Way and Space at Rear.

Finsbury, Central.—That the Council do, in the exercise of its powers under sections 13 and 41 of the London Building Act, 1894, consent to and permit of the erection of shops with rooms over on lots 37C, 39, 40, 41, 42, and 43 of the Council's land in Rosebery-avenue, Clerkenwell, with portions of the buildings at less than the prescribed distance from the centre of Jelley's-yard and Garnault-mews, and with irregular open spaces at the rear of the new buildings, as shown upon the amended plans submitted with the further application of Mr. F. Smith on behalf of Mr. H. Roffey.

Formation of Streets.

Lewisham.—That an order be sealed and issued to Mr. W. W. Scott, sanctioning the formation or laying out for carriage traffic of an extension, 40 ft. wide, of Lansdowne-road, Lee, and the widening to 40 ft. of the remaining portion of that road.

Height of Buildings.

City of London.—That consent be given to the erection of an addition to the Guildhall School of Music, Tallis-street, Whitefriars, fronting upon John Carpenter-street, and to exceed in height the width of that street, on the application of Mr. A. Murray on behalf of the Corporation of the City of London.

Conversion of Buildings.

Dulwich.—That the Council do, in the exercise of its powers under section 211 of the London Building Act, 1894, allow the conversion into a dwelling-house of an office building on the west side of Wren-road, Camberwell, such office building not having an open space at the rear, as shown upon the plan submitted with the application of Mr. E. J. Strevens on behalf of Andrews' Star Omnibus Company, Limited.

Building for the Supply of Electricity, &c.

Lambeth, North.—That the Council do approve of the plans, dated July 7, 1897, submitted with the application of Mr. W. B. Pinhey on behalf of the Charing Cross and Strand Electricity Supply Corporation, Limited; for the construction of coal bunkers and an extension of the boiler-house at the generating station and works, No. 85, Commercial-road.

Dwelling-Houses on Low-lying Land—Part XI.

Woolwich.—That the solicitor do prepare a licence under section 122 of the London Building Act, 1894, to Messrs. J. & C. E. Pearson for the erection of fifty-eight dwelling-houses on low-lying land situated in Abbey-grove, Abbey Wood, in accordance with the plan submitted with the application made on behalf of Messrs. Pearson by Mr. T. J. Young.

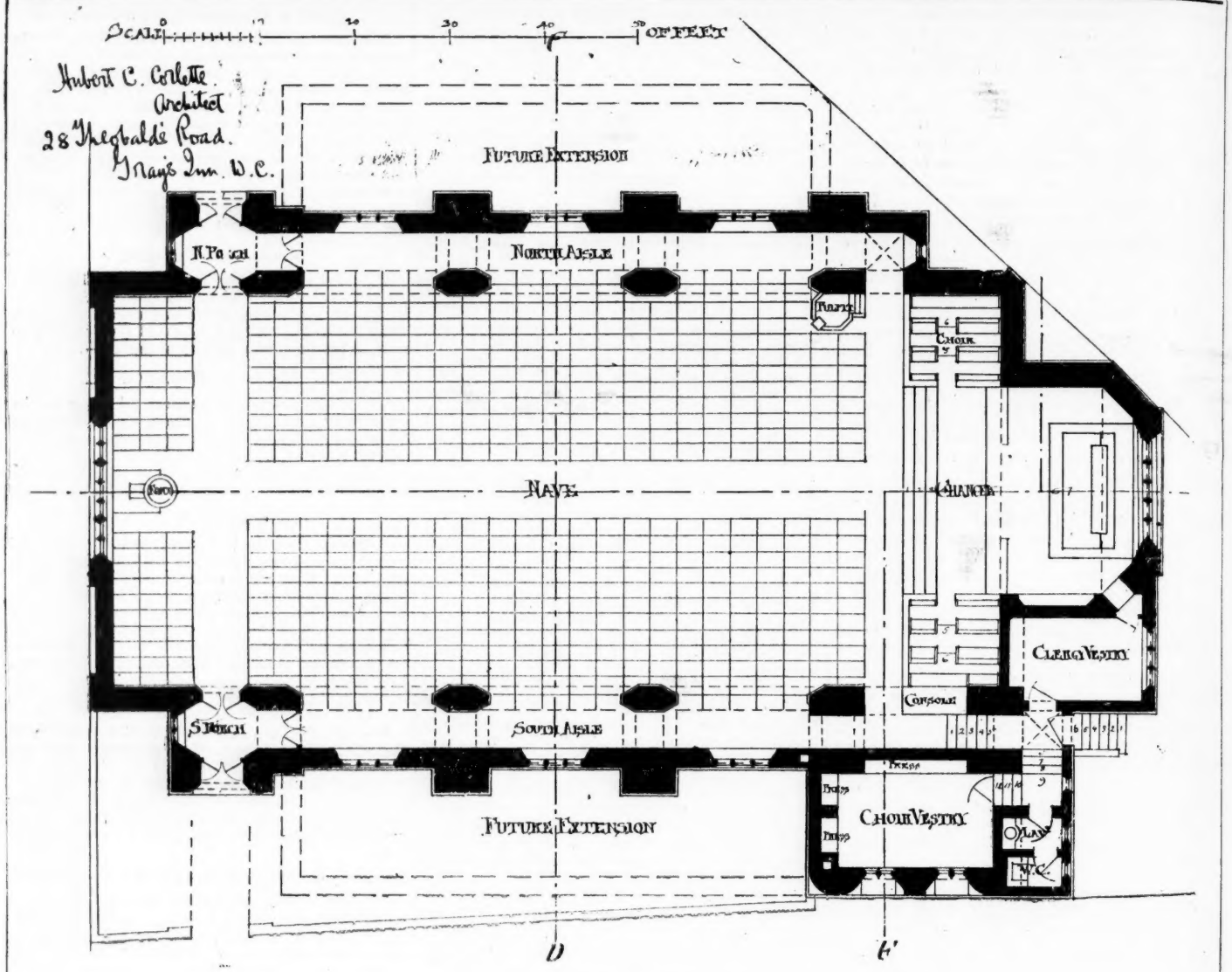
Poplar.—That the solicitor do prepare a licence, under section 122 of the London Building Act, 1894, to Mr. W. Legg, for the erection of two dwelling-houses, one with a shop, on low-lying land situated at Manilla-street and Alpha-road, Millwall, in accordance with the plan submitted with the application made on his behalf by Messrs. J. & S. F. Clarkson.

Recommendations marked † are contrary to the views of the Local Authorities.

COMPETITIONS.

TECHNICAL INSTITUTE, &c., TONBRIDGE.—In the competition for New Technical Institute and Free Library, Tonbridge, the first premiated design was sent in by Mr. John H. Phillips, St. John's Chambers, Cardiff. The second premiated design was by Mr. John Johnson, 9, Queen Victoria-street, E.C., and the third by Mr. Henry A. Cheers, Twickenham.

HOTEL METROPOLE, MORECAMBE. — The award of Messrs. Harrison, Hall, & Moore, the adjudicators in this competition, is as follows: First premiated design, "Experience"; second, "1897"; third, "Pro Bono Publico"; fourth, "Dividend"; and first of the unpremiated designs, "Merlin." The authors of these designs are:—"Experience," Messrs. Mangnall & Littlewoods, 42, Spring Gardens, Manchester; "1897," Messrs. Essex, Nicol, & Goodman, Newhall Chambers, Newhall-street, Birmingham; "Pro Bono Publico," Messrs. H. & E. Marten, 5 and 7, Charles-street, Bradford; "Dividend," Messrs. Chorley, Connon, & Chorley, 15, Park Row, Leeds; "Merlin," by Messrs. Butterworth, Duncan, & Marshall, of Rochdale and Morecambe. The conditions issued to competitors requested accommodation for a first-class hotel containing 150 bedrooms and an arcade of shops, to cost 30,000*l*. The site of the hotel is situated at the extremity of the West End Promenade, and surrounded by four frontages, viz.: The Marine Drive, the Promenade, Heysham-road, Sefton-road. The two principal façades of the first premiated design face the Marine Drive and the Promenade with an entrance from each, the other two frontages to Heysham and Sefton



Design for Church at Exeter. Plan.

roads being appropriated by the arcade and shops. The two corners to Heysham-road are utilised for restaurants and refreshment rooms connected with the hotel, but so arranged as to be practically separated. The hotel is to be four stories high, exclusive of basement, and the material used will be buff brick, terra-cotta, and stone.

SCHOOL, UPPERTHORPE, SHEFFIELD.—At a recent meeting of the Sheffield School Board the design of Messrs. Hemsoll & Paterson, for the school to be erected at Upperthorpe, was the one chosen by the Buildings Committee, and the premium of 10*l.* offered for the plan considered third in order of merit was awarded to Mr. Mitchell-Withers. Messrs. Holmes & Watson were also competitors, and the committee recommended that they be instructed to prepare plans on similar lines for a school at Pomona-street, to accommodate 450 children, the rooms to be so arranged that a portion of the building may at first be used for infants, and the rest of the space for boys and girls, the plan to be such as to be capable of enlargement at either end. This recommendation was in lieu of the premium offered for the design considered second in the order of merit in the competition for Upperthorpe School.

Illustrations.

ST. MICHAEL'S CHURCH, SOUTHFIELDS, WANDSWORTH.

THIS church consists of a nave 90 ft. long and a chancel 42 ft. long, the width being 28 ft. 10 in. from outside to outside of the walls. The roof is continuous, and there is no chancel arch.

In the same manner the north and south aisles, which are 14 ft. 6 in. wide in the clear, run right through and form aisles for the chancel, the organ standing in the north chancel aisle. The clearstory is carried by arches nearly 20 ft. in the clear of the piers, which are octagonal and 2 ft. 8 in. in diameter. There is a choir vestry 25 ft. by 17 ft., and a clergy vestry 12 ft. square, opening out of the north chancel aisle, under which is the heating chamber.

The church seats 1,738 persons, allowing 20 in. to each sitting, and 3 ft. from back to back of seats. It is faced externally with red brick and Monk's Park Bath stone. The nave roof is to be covered with red Broseley tiles, and the aisle roofs with Westmoreland green slates.

The contractors are Messrs. W. Johnson & Co., of Wandsworth Common, and Messrs. Wenham & Waters, of Croydon, are doing the heating. The clerk of works is Mr. T. Shelmerdine.

Mr. E. W. Mountford is the architect. The drawing is exhibited at the Royal Academy.

DESIGN FOR CHURCH AT EXETER.

THIS church was designed by Mr. Hubert C. Corlette (Nicholson & Corlette) to provide seats for 600 in the nave, which is 44 ft. wide from centre to centre of the arcade piers. These are more strictly portions of walling having arches between them, so that the weight of the superstructure should be concentrated on a broad foundation rather than on small points. This seemed advisable from the nature of the ground on which the church was to be built. North and south porches communicate directly with the nave and aisles, with a double screen of doors. The font is at the west end, and it was suggested that a screen should be placed across between the north and south entrances, immediately at the back of the last row of seats in the nave proper. By this means a narthex was formed, in which seats are provided, some of which would be available for late arrivals, who could wait there till the conclusion of certain parts of the service, and so avoid interruption.

A wide open space is obtained in front of the sanctuary, providing room for the easy and quiet movement of communicants, who would come up by the centre and return by the sides into the aisles. The choir has been so placed that it shall be no obstruction, and also arranged with a wall on two sides to throw the voices out into the body of the church, which is 108 ft. long east to west. The organ is in the tower on the south side of the choir. The steps from the vestries into the church became necessary, as the heating chamber, which is below the choir vestry, had to be above ground. It was estimated that the building would cost 6,000*l.*

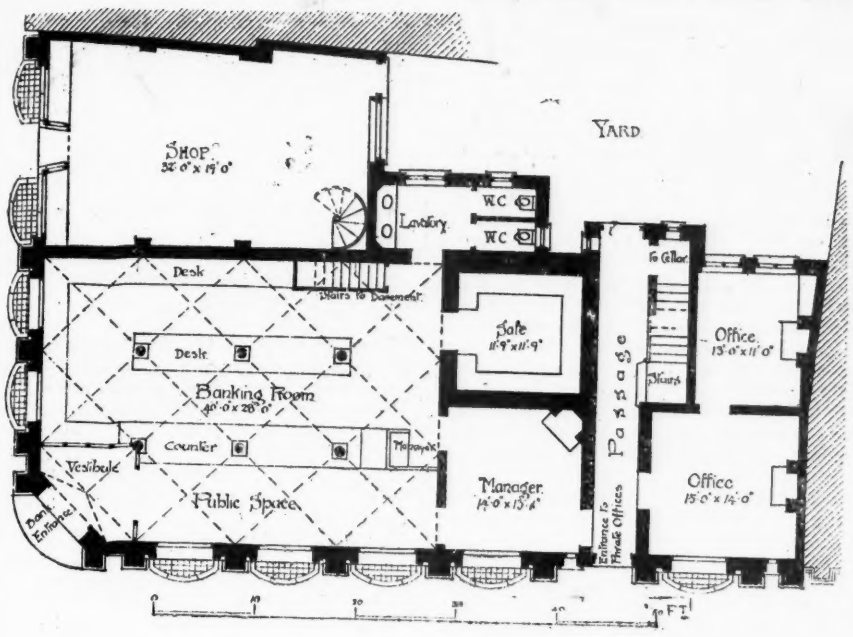
ST. PETER'S, EAST GRINSTEAD.

THIS church, now in course of erection on a site in the London-road, near the railway station, is being built for the Catholic community of the locality, from the designs of Mr. Fredk. A. Walters, of Westminster. The materials used externally are brick faced with rough cast, with Bath stone dressings, the roofs being covered with green Westmoreland slates. Messrs. James Longley & Co., of Crawley, are the contractors. The church will accommodate about 400 persons, and the cost will be about 5,000*l.*

NEW POLICE OFFICES, COURTS, &c., ROTHERHAM.

THESE buildings, which are just being completed, are erected adjacent to the Municipal Offices. The accommodation comprises two large courts, with magistrates' rooms and separate entrance, large public halls and staircase, giving access to the two courts, and solicitors' and counsel rooms, and male and female witnesses' rooms on the first floor.

The police offices have a separate entrance, and the accommodation provided consists of charge room, chief constable's room, inspector's room, parade room, inspector's house, weights and measures' offices, large police yard, fifteen cells, and a large association cell. The architect is Mr. Richard J. Lovell, of London, and the builder is Mr. R. Snell, of Rotherham.



Bank Premises, Doncaster. Plan.

NEW BANK PREMISES AT DONCASTER.

THIS building, which is now approaching completion, is faced with brown Portland stone, the roofs being covered with Westmoreland slates, and the dome with copper. The crowning figure is a reproduction in bronze of John of Bologna's "Mercury."

The upper floors comprise offices and a caretaker's residence. The construction is fireproof throughout.

Mr. Wm. Anelay is the builder, and Mr. Carse has acted as clerk of works.

The carving and sculpture is by Messrs. Farmer & Brindley.

Internally, the bank is groined throughout. The walls are panelled, and, with the fittings, are of mahogany, by Messrs. Marsh, Jones, & Cribb.

Messrs. Demaine & Brierley, of York, are the architects.

SKETCHES IN WORCESTERSHIRE AND WARWICKSHIRE.

THOSE parts of the counties of Worcester and Warwick situate in the valley of the Avon are full of interest to architectural students, yet although Evesham and the country round Stratford-on-Avon are well known, the more remote parts of the district are almost *terra incognita*. The visit of the Architectural Association to Worcestershire in 1895 attracted much attention; and profiting from their experience, I and a friend of like tastes recently made the Avon valley the *locale* of a fortnight's sketching tour.

To properly explore the district cycles were indispensable, and having our headquarters at Evesham, a quaint, old-fashioned town, we made daily excursions, astride the wheel, to the various places of interest within a few miles of that centre, among these places being Broadway, Campden, Mickleton, Stanton, Stanway, and Stratford-on-Avon, all excellent sketching resorts. Not all of these places are accessible to the ordinary tourist, and some of the accompanying sketches will probably be fresh to the reader.

Salford Hall, a charming Elizabethan house six miles from Evesham, is locally known as the nunnery, having for thirty years in the early part of the century been occupied by Benedictine nuns, refugees from France. Part of it is still a Catholic chapel, the remainder being occupied by a genial farmer. The sketcher will obtain two or three days good work here, especially if he be a colourist, for the yellow and grey stone of the building affords a delightful contrast to the red tile roofs and the surrounding trees. Over the doorway, which is poor in design and detail, is the motto, "Moderata durant," and the date 1662. One of the rooms, formerly the hall, has a fine five-light mullioned window with double transoms, and in a bed room is an interesting oak fireplace. This, however, like the panelling which extends from floor to ceiling, is to some extent spoiled by being painted.

The two views of the old Vicarage at Evesham—a good example of the half-timbered style so much in evidence in this neighbourhood—are taken from opposite sides of the archway, standing close to the two parish churches and within a stone's throw of the beautiful Bell tower. Beneath the gabled portion of the building are the remains of a very interesting piece of Norman arcading, which suggest the existence at one time of a structure of a much earlier date than the present one.

The next sketch is of cottages at Clifford Chambers, a village in which is also a hall of excellent design. Its soft—almost salmon coloured—brickwork, with pearly grey stone-healing and yellow stone dressings, affords a charming piece of colour, such as one seldom finds in the stone district.

The block of cottages at Stanton, sketched from the village cross, is one of several effective groups in a small picturesque village, which, according to tradition, was once a considerable market town. The disgraceful feature of Stanton is its church, which, over a century ago, was described by Nash, the county historian, as being "airy, but in bad repair." Since that time the interior has been falling into absolute ruin, apparently without effort being made even to keep it in decent order. The Jacobean pews are tumbling to pieces, the floor is rotting away, and the whole church is a sight to sadden the heart of every architect and archæologist.

The large, antiquated house at Bidford is known traditionally as the "Falcon Inn," the scene of the Homeric contest between the Bidford topers and the Stratford lovers of good ale, among whom was Shakespeare. The Stratford champions were ignominiously defeated and passed the night under a crab tree, and the village received from the bard the epithet of "Drunken Bidford," which it still proudly retains.

F. TAYLOR.

Aylesbury.

ARCHÆOLOGICAL SOCIETIES.

SURREY ARCHÆOLOGICAL SOCIETY. — The annual excursion of this Society is fixed to take place on the 28th inst., and will be to Epsom, Walton-on-the-Hill, and Banstead. The meeting place will be at Epsom, whence carriages will drive to Walton-on-the-Hill Church, where a short paper on "English Leaden Fonts," with especial reference to the example in this church, will be read by Mr. J. L. André. An account of this font, with an illustration, by Mr. André has already been published in the ninth volume of the Society's Transactions. A visit will next be paid to the site of the Roman villa at Chussex Plains. This was also illustrated and described in the second volume of the Society's Transactions by the late Mr. W. W. Pocock. The members will proceed next to Banstead, where Mr. F. A. H. Lambert will describe the church and its history. "The Oaks" will be visited, and Mr. Ralph Nevill will relate briefly the history and associations of the house. Garratt's Hall, Banstead, will also be inspected, where the ancient fireplace and firedogs from Shortes Place will be shown, and in the hall will be exhibited a collection of pictures, books, and other objects of local and historical interest. At Burgh Heath a few notes on same and its connexion with Hubert de Burgh will be read by Mr. Montague S. Giuseppi, who has accepted the office of Honorary Secretary, in the place of Mr. Mill Stephenson, resigned. Sir William Vincent, Bart., of D'Abernon Chase, Ashtead, will be the President for the day. Further particulars of the excursion can be obtained at the offices of the Society, 8, Danes' Inn, Strand.

NEWCASTLE SOCIETY OF ANTIQUARIES.—The members of the Newcastle Society of Antiquaries visited Easington, Seaham, and other places in the neighbourhood recently. On the way to Easington they alighted and viewed the church at Dalton-le-Dale, which was described by Mr. W. H. Knowles, architect, of Newcastle, who pointed out that it belonged to the Priory of Durham. It comprises an aisleless nave and chancel of equal width, and a south porch, and is a valuable specimen of a church which has apparently never been extended beyond its present foundations. It has also escaped recent alteration. The earliest portion of the architecture is the Norman door, now built up, in the north wall of the nave. This doorway is a piece of the earlier building incorporated, but whether it always occupied its present position it is difficult to say. Excepting a portion of the north nave wall, the church is of one date. The position of the windows, which are placed 11 ft. above the ground level, the section of the mouldings, and the flatness of the pilasters induced Mr. Knowles to think that the date of the work was within a few years of 1,200. The chancel arch is modern. It is possible, Mr. Knowles said, that the north wall, with its Norman door, was left standing when the east, south, and west walls were built about the year 1200, and that it did duty until the fourteenth century, when it was rebuilt. At the same period the two-light window, with the pierced quatrefoil head, in the north chancel wall, was inserted, and the dwarf buttress below it, as well as the large buttress at the north-east angle, were built. The porch also is of the same date. There is a priests' door on the south side of the chancel, and a built-up window on the north nave wall at its east end. The lancets at the east end are the same as those at Lanchester, and, like them, the rear arch is trefoil-shaped. From Dalton-le-Dale the party continued their drive to Easington, where the rectory and its gardens were inspected. In the garden are various stones taken from the parish church, and portions of a decorated window attracted special notice. The rectory, which contains many vestiges of mediæval architecture, was inspected through the kindness of the Rev. Canon Scott-Moncrieff, as was also an adjoining building, said to have been a tithe farm. The visit to the rectory was followed by luncheon at the King's Head, Easington, after which the Parish Church was viewed, the Rev. Canon Savage of South Shields reading a paper descriptive of the place. He directed attention to the arcades and to the wood work of the period of Bishop Cosin, the pew ends and pulpits being selected as of more than ordinary interest. The rector showed a large carved grave cover just recently found in the burial ground, and which had been given a place near the entrance to the church, beneath the tower. From Easington the excursionists were conveyed by brake to Seaham, having an opportunity en route of inspecting the Dawdon Tower or rather its ruins, which were described by Mr. W. H. Knowles. At Seaham Church the party was received by the Rector, the Rev. A Bethune. The church appears to be principally composed of late Norman and late fourteenth century architecture. Its seventeenth century pulpit and font cover are objects worthy of notice. After tea, provided by the rector, the room in which Lord Byron's marriage took place in Seaham Hall was pointed out. The excursionists subsequently returned to the brake and drove into Sunderland, where they took train for home.—*Newcastle Journal.*

PROPOSED NEW CHURCH, WEST HARTLEPOOL.—The work of designing the new Church of St. Oswald, in the parish of West Hartlepool, has been entrusted, we understand, to Messrs. Hicks & Charlewood, of Newcastle-on-Tyne.

ENGINEERING SOCIETIES.

SOCIETY OF ENGINEERS—A visit was made by a party of the members of the Society of Engineers on the 20th inst. to the ironworks of Messrs. Easton, Anderson, & Goolden, Limited, at Erith. The Erith ironworks were commenced in 1864 by the firm of Easton, Amos, & Anderson, and were laid out by Sir William Anderson, K.C.B. Designed at first as an offshoot from the principal works at the Grove, Southwark, gradual extensions were carried out from time to time, until in 1873 the Grove Works were finally closed, and the machinery and tools moved down to Erith. The works stand on a plot of ground about 17 acres in extent, having a frontage of about 800 ft. to the River Thames, and the various shops are arranged side by side, the general direction being perpendicular to the river bank, so as to allow of the shop travellers working out on a gantry over barges lying in the river. A railway siding extends from the South-Eastern Railway into the works. The works are entered through the offices, which are placed at the south-west corner of the property, and which consist of a clerk's office, with manager's and other rooms on the ground floor, and a drawing office occupies nearly the whole of the first floor, the remainder being taken up by estimating and electrical offices; above is a photographic room. The various shops lie between the offices and the river. Commencing from the west side there are covered stores for stock, 95 ft. by 43 ft., and sheds for patterns covering an area of 150 ft. by 90 ft. Next to these is a pattern shop 100 ft. by 50 ft., with a packing store at one end, and an electrical shop in two bays with a store close by. The dimensions of the electrical shop are 150 ft. by 100 ft., and room is left at the river end for extensions. East of these shops is a large open yard, and again east of this is the main building, consisting of six equal spans of 43 ft. by 600 ft. The two western spans are occupied by an iron foundry 240 ft. long, a brass foundry and smiths' shop. The next two spans are given up to machine and erecting shops, the roof in the latter being carried up so as to allow for the erection of lofty engines, the high traveller rails being 30 ft. above floor level. The two bays next to these are devoted to boiler and bridge building; beyond this is another extensive yard, in which is a gantry used for the erection of caisson and other large work not easily dealt with in the shops. Beyond this is a field which is utilised as a ground for testing gun carriages, and is provided with suitable butts, &c. A large dining-hall is provided for the accommodation of the workmen. The works are provided with railway tracks, and materials can be transferred from one department to another at a low cost. Of late years an electrical department has been added to the works, and which received an additional impetus when the old Company of Easton & Anderson, Limited, was amalgamated with the electrical firm of W. T. Goolden & Co.

Correspondence.

To the Editor of THE BUILDER.

PETERBOROUGH CATHEDRAL.

SIR,—I notice that in your last issue you refer to those who publicly expressed their objection to the demolition of the Peterborough gables as being either ignorant or as having a purpose "of their own."

As included in this reference, and being able to claim your knowledge of my having some acquaintance with the matters at issue, may I ask what is the ulterior motive that you are ascribing to me for my objection to Mr. Pearson's methods?

EDWARD S. PRIOR.

*** If Mr. Prior looks at the wording of the sentence again, he will see that it does not necessarily include *all* who protested in every form against the work at Peterborough, though we admit that the sentence might be capable of being construed so. What was in our mind mainly was the violent speeches at archæological meetings and the violent letters in daily papers, abusing the Peterborough authorities as if they were about to commit murder. As to "motives," it is common talk that some of the most violent opposition from those who could not be called "ignorant" arose from personal animosity to Mr. Pearson. We do not suggest that Mr. Prior, or some others whom we might name, were moved with any such feeling; but we may naturally ask them "que diable faisaient-ils dans cette galere?"—ED.

The Student's Column.

QUANTITIES AND QUANTITY-TAKING.

CHAPTER I.—INTRODUCTION.

THE object of a Bill of Quantities is essentially to enable builders to arrive at an exact estimate of work to be done, and in the case of a competition to place all the competitors upon the same footing, though upon looking through some of the bills sent to contractors one would think this idea was farthest from the thought of the persons who prepared them. Items lumped together, items most ambiguously worded, and (worst of all) items which give one the impression that the person who was supposed to prepare these bills was in grave doubt as to what was really meant, and so left it to the contractor to make up his deficiency.

The term "surveyor" is purposely avoided in the foregoing sentence, as bills such as have been described are generally prepared by somebody who has had more in his mind the fees than the idea of preparing bills of quantities with the object first mentioned.

In the next place, architects are frequently under the impression that quantities increase the cost of the work. This is a fallacy long since exploded as regards honest attempts to get a fair price, and as for those members of the profession who endeavour to save their clients money—more out of consideration for their own credit than for their client's pocket—by holding back information that ought to be placed before the contractors tendering, they are doing their best to make a rod for their own back, as well as for that of their clients. In looking through the law cases it will be found that few of the contracts, where there is any dispute, have been based upon a really *good* bill of quantities.

Even if quantities are not prepared for the employer, it by no means follows that he does not pay for them. Few contractors care to jump at a price, unless they jump high enough to cover all contingencies; so the drawings are handed to a surveyor, who has to prepare his bills in perhaps half or a quarter the time that should be allowed; he, therefore, to protect himself, has to lump items, and to take his dimensions liberally, and then, for these rough quantities, as it is frequently a case of "no success no pay," heavy fees are tacked on to the estimate, which, of course, have to be paid by somebody, and that somebody is the employer.

Again, no one who has not had experience in settling up the accounts at the completion of the works can appreciate the great assistance derived from a carefully prepared bill of quantities.

This being the case, it behoves the young surveyor to set out with the idea of preparing such bills as shall leave the persons tendering in no doubt as to the intention of the architect as shown by his drawings and specification, and it is well that he should bear in mind that this goal is not attained without strict application, and whatever treatises he may read will be of little avail unless he applies himself to his subject with diligence and a determination to thoroughly master all its details; for if there is one thing more than another where "a little knowledge is a dangerous thing," that one subject is the one now under consideration.

At no time have contractors shown their appreciation of quantities more than at present, and it is a good recommendation for the quantity surveyor's work that respectable builders frequently refuse to tender unless quantities are supplied.

The system that will be described in these papers will be that generally employed by London surveyors. There are, of course, provincial differences, but the writer has made inquiries in different parts of the country, and has found a generally prevalent feeling in favour of the London system, even in preference to that in vogue in the district in which the work is carried on. One cannot help thinking that this preference is largely due to the fact that, while in London the practices of architect and quantity surveyor are generally distinct, in the provinces the quantities are prepared in the architects' offices by an assistant who is often not fully qualified for the work, or who has his attention taken up with other matters.

The process of preparation of quantities is roughly divided into three operations:—First, "taking off," *i.e.*, taking the measurements from the drawings and entering them upon paper specially ruled in four columns; the second column containing the dimensions, the first the "times-ing" or number of times the dimension will repeat; the third for the result of the "squaring," and the fourth and widest for the description of the item, *e.g.*:—

4/	3.0 7.0	84.0	2 in. 4-panel moulded both sides door.

The second operation is that of abstracting, *i.e.*, arranging the items in the various trades under their various headings, and in certain relative positions; this will be more generally described in its proper position.

The third operation is that of "billing," the finished product of the surveyor, *i.e.*, putting the collected items on the abstracts in their proper order and with their full descriptions in the bill, to enable the builder to place his prices against the various items, and to money them out to arrive at a total.

These last two operations are termed "working up," in contradistinction to that of "taking off."

In addition to these there is the work of squaring of the dimensions and the "making up" of the abstracts in addition to the checking at each stage of the working up.

Every surveyor has his own pet order in taking off; some follow out a system that is now almost obsolete, *i.e.*, confining themselves strictly to trades. Others follow a modification of this system by dealing with the carcase first, and afterwards the finishings, *e.g.*, in taking the dimensions of brickwork they will take the deductions of brickwork and facings for the openings, leaving the joiners' finishings to be taken separately; others, again, follow a system whose chief characteristic is "want of system," *i.e.*, taking the various items as the fancy strikes them. All three systems have something to recommend them; the first the ease in abstracting and facilitating the writing of the bills, as it is not necessary to wait until the completion of the taking off before commencing the bills; but, on the other hand, the difficulty of remembering every little incidental item when one has left the bulk of the work militates against this system, in addition to the trouble of having to wade through the whole of one's dimensions in the event of variations on the contract, for the purpose of arriving at omissions. The second system mentioned is *theoretically* undoubtedly the best, but again one is not always fortunate enough, in these days of rushing work, to get the drawings complete when commencing the work, it is therefore necessary frequently to drift, however unwillingly, into system or want of system No. 3, which enables the surveyor to go on with the work shown complete on the drawings in his possession. The chief danger in this last system is that of leaving out some item altogether. However, as the dimensions are simply the means to the end, whichever system is followed (or whatever combination of all three), the great thing for the surveyor to bear in mind is that it is often necessary to refer to the dimensions months, and possibly years, after they have been finished, and that therefore they should be written in such a way that with the drawings before him there should be no difficulty in tracing every dimension. This is greatly facilitated by making numerous headings and sub-headings, and notes to the dimensions themselves. The advantage of this will be obvious in the later chapters of these notes.

Another point the "taker-off" should always have before him is the importance of making his dimensions and descriptions self-explanatory. Never leave the abstractor in doubt as to the meaning—as to whether an item is similar to one before or not. If there are various items of a somewhat similar nature, but not absolutely identical, it is far better to write a full description than to say "as before; but, &c." If one wishes to refer to a similar item previously taken, unless there is absolutely no doubt to which the description applies it is well to refer to the column where the first description occurs.

Do not, in "taking off," adopt a "give and take" system—this is a very good rule in many things, but not in quantity taking. It is a very poor excuse, and one that does not beget confidence, when a question is raised as to the sufficiency of an item, to be compelled to allow that this particular item is short and to fall back upon the excuse that "you have an excess in some others." Each item should stand by itself and on its own merits, therefore let correctness

in every particular be the aim of the Surveyor, whether it is in "taking off" or working up." And this is only attained by conscientiously taking exact dimensions: *e.g.*, if one, in taking the size of a window, is inclined to be too liberal, and if he wishes his dimensions to "hang together" as they should, the deductions from brickwork, for instance, must correspond with the extra allowance in joinery, otherwise the result is two different dimensions for what should be identical.

It will be obvious that a thorough knowledge of construction is absolutely necessary before anyone can hope to be able to take up the work of the quantity surveyor with any measure of success.

Having now given some idea as to what is required, we will in the immediately succeeding chapters proceed to consider the modes of measurement in the various trades.

GENERAL BUILDING NEWS.

GUILDHALL SCHOOL OF MUSIC EXTENSION.—The foundation stone of the extension of the Guildhall School of Music was laid on Wednesday by Mr. Deputy Pearse Morrison, Chairman of the Music Committee. The extension will be in the rear of the present building, on a site which has been reserved for the purpose. The new building will have a frontage to John Carpenter-street of 72 ft. 6 in., and a depth of about 51 ft. 6 in., the area of the entire site being about 3,700 ft. The accommodation to be provided consists of, on the ground floor level, an orchestral saloon 47 ft. wide and 55 ft. long, with a stage 47 ft. wide by 13 ft. deep. In height the saloon will be 30 ft., and there will be a gallery, entered at the first floor level of the school. The saloon will accommodate about 650 persons, 440 being on the ground floor and the remainder in the gallery. There will be six exits from the saloon; four are on the ground floor, three of which doors will open direct on to the pavement in John Carpenter-street; the other two exits are in connexion with the gallery. On the second, third, and fourth floors there will be in all thirty class-rooms, ten on each floor. The basement will be taken up with dressing-rooms, &c., which will be in direct communication with the stage by means of a staircase at each side. In order to connect the new building with the old, it will be necessary to utilise three of the present class-rooms, so that the net gain in class-rooms will be twenty-seven. An elevator will be provided for communication with the various floors in the space now occupied by the piano lift. The floors of the new building will be fire-resisting throughout. All the class-rooms will be warmed by means of hot water radiators, through which fresh air will be passed. No open fireplaces will be provided in the new building. The extraction of the vitiated air from the various rooms will be effected by means of trunks having valved openings near the ceiling; these trunks will be connected at each floor into a large upcast shaft at the north end of the building, and in order to generate an upcurrent in the shaft, the smoke flue from the heating chamber will be placed alongside. In summer, when this heat will be absent, the necessary current will be provided by means of a steam radiator placed at the top of the shaft. The front elevation will be carried about 22 ft. higher than the present; it will be faced with Portland stone rising from a granite plinth. The style adopted will harmonise with that of the old building, which was designed by the late Sir Horace Jones. The architect of the new building is Mr. Andrew Murray, the City Surveyor. The cost of the new building, including fittings, is estimated at 20,500*l.*

NORTHERN POLYTECHNIC INSTITUTE, HOLLOWAY-ROAD.—The Lord Mayor recently opened the Great Hall of the Northern Polytechnic Institute in the Holloway-road. The educational buildings at present erected consist of two blocks—one with a frontage on the Holloway-road, and the other roughly parallel with it some 200 ft. away. These two blocks are connected by a corridor, on the north side of which is the great hall; while on the south side is a plot of ground, covering nearly twice the area of the hall, on which are afterwards to be erected the remaining buildings of the institute. Each of the main blocks consists of three floors. In front the ground-floor is taken up by the entrance-hall, the principal's room, and the secretary's offices. Above are the drawing office, the engineering department, and the physical lecture theatre, and laboratory. The second block contains the brick-work shop, the smithy, the carpenters' shop, and the mechanical and chemical laboratories. On the ground-floor beside the hall are the gymnasium, and a large room to be fitted up as a common room. The great hall is approached from the Holloway-road by means of a vestibule. It measures some 100 ft. by 55 ft., will seat over 1,200 persons, and is fitted with a large orchestral platform. The roof is elliptical in shape, and is covered with fibrous plaster divided into panels with ornamental centres, every alternate panel containing an electric light. In the day time the hall is lighted by circular-headed windows, supported by stone columns, each bay containing three windows, enclosed in a setting of moulded bricks, whilst the floor is of solid cubes, and has a gradual slope from the entrance to the front of the platform. The gallery has a separate entrance from the Holloway-road, and an emergency exit to the rear. In the front there are three doorways, with three on the north side as exits, leading into a corridor connecting the body of the hall with the orchestra platform. Beneath the platform is a retiring-room, with other rooms for artists, speakers, &c., whilst lavatories are also provided close by. The heating is by steam, conveyed in pipes along channels each side of the hall. The architect was Mr. Charles Bell, of London, his design being selected in competition by the assessor, the late Mr. Wyatt Papworth. The work has been carried out by Messrs. Macfarlane Brothers, of Holloway. Messrs. Clarke & Sons, of London, supplied the heating plant; and Messrs. Kite & Co. the ventilating arrangements, and the plaster ceiling was made by Mr. Tanner, Holloway.

CARLTON HOTEL, PALL MALL.—Mr. Lewis H. Isaacs and Mr. Henry L. Florence have been appointed architects for the completion of the Carlton Hotel, now in course of erection from the drawings prepared by the late Mr. C. J. Phipps. The design for the exterior will be carried out with but little alteration; but the plans for the interior have undergone considerable modification.

NEW CHURCH, RHOSROBIN, NEAR WREXHAM.—This new church, to be dedicated to St. Peter, at Rhosrobin, in the parish of Rhosddu, is to be built on a site given by Sir Watkin Williams Wynn, on the west side of the road from Wrexham to Bradley Mills. It will consist of a single span nave, 50 ft. by 25 ft., with chancel, 25 ft. by 17 ft. 6 in., vestry, vestry porch, surmounted by a small octagonal bell turret, and south porch to nave, and is designed to seat 224. The church is to be built of bricks from the neighbouring brickworks of Messrs. Clark & Rea, with terra-cotta dressings, also made by the same firm, open timbered and boarded roof, slated with Bangor slates. All the interior woodwork, including the seating, is of pine. The contract has been let to Messrs. Thos. Rogers & Son, of Brymbo, at 845*l.*, the building committee finding the bricks, terra-cotta, tiles, sand, and carting of these, and the work is being executed from the designs and under the superintendence of Mr. J. H. Swainson, architect and surveyor, Wrexham, whose plans were selected in a recent limited competition.

CONVALESCENT HOME, CRANBROOK.—At Starvenden Farm, between Staplehurst and Cranbrook, in Kent, Princess Louise, Marchioness of Lorne, opened a convalescent home, on the 20th inst. The building, which is of red brick, is erected on a site of three acres of ground. It is designed to accommodate eighteen patients—six male, six female, and six children—besides the nursing staff, which will consist of a matron and two nurses, and two small bedrooms for invalid nurses. The plans were prepared by Mr. C. Grieve, and the buildings have cost about 3,000*l.*

ADDITIONS TO HOME OF REST, DUNDEE.—On the 16th inst. a new recreation hall and dining-room was opened in connexion with the Bannatyne Home of Rest. The hall measures 36 ft. long and 24 ft. broad. Adjacent to the platform at the east end there are retiring and dressing-rooms—each occupying one of the corner turrets—and lavatory accommodation. The architects were Messrs. C. & L. Ower, Dundee.

ALTERATIONS TO CATFORD HILL BAPTIST CHURCH.—The additions made to this church practically amount to a remodelling of the original plan, which consisted of a nave 60 ft. by 39 ft. wide, with a small lecture hall and vestry behind. This lecture hall and vestry and one bay of the church have been taken down, and in the rear of the nave, and between it and the lecture hall or schoolroom and class-rooms, the church has been enlarged by the addition of double transepts on either side of the extended nave, and by an apse, or organ and choir-chamber, behind the new platform. The total length of the church is now 98 ft., and its width across the transepts 56 ft. The apse opens out into the extended nave by a stone arch, 22 ft. span. The preacher's platform is in front of the choir, and raised 4 ft. above the nave. In front of the preacher's platform is the Communion platform. Under the movable floor of this platform is the baptistry. On the west side of the apse is a vestry, with lavatory, and on the east side a large double vestry, 33 ft. by 16 ft., which can be separated into two by a sliding panelled wood partition. A new kitchen is also provided, fitted up with the necessary appliances. In connexion with the school there is an entrance lobby. Two hundred and forty additional seats are provided in the church and choir. The contract was taken by Mr. Thomas J. Barden, of Maidstone, for a little over 3,000*l.*, and the architect is Mr. George Baines, of London.

VICTORIA PAVILION, MORECAMBE. — The new Victoria Pavilion was opened at the Winter Gardens, Morecambe, on the 19th inst. The building has been erected by Messrs. S. Whitehead & Sons, of Oldham, from the designs of Messrs. Mangnall & Littlewoods, architects, of Manchester.

WESLEYAN CHURCH, WEST BRIDGFORD.—The foundation stone has just been laid of a Wesleyan church for West Bridgford, Nottinghamshire. The building will seat about 800 persons, and will be situated at the corner of Musters and Patrick-roads. The church will have at the angle a clock tower of over 50 ft. in height. The exterior of the building will be of Coxbench stone, and Hollington stone is to be used for windows, doors, and all finished dressings. It is proposed to cover the roof with red tiles. The inside will have a nave 86 ft. in length, with a north and south aisle on either side. There will be a small minister's vestry with separate lobby and lavatory accommodation, and also a large vestry on the north side. The building has been designed by Messrs. Brewill & Baily, architects, of Nottingham and Newark. Mr. Maule is the general contractor, and the firms of Messrs. Garton & Burton and Appleby & Lambert are the sub-contractors for the masonry and joinery respectively.

WAREHOUSE, LEITH.—At Leith Dean of Guild Court on the 19th inst., Messrs. Pattisons, Limited, applied for warrant to erect a warehouse nine stories in height at Bonnington. After agreeing to several alterations the plans were passed. The architects for the new building are Messrs. Geo. Beattie & Son, Edinburgh.

ALMSHOUSES, STOCKTON.—The new almshouses at Stockton are now occupied by the inmates. The new building is situated at the corner of Mill-lane and Dixon-street. It is of brick, with stone facings, and has been built by Messrs. Perks & Son, to the designs of Mr. T. W. T. Richardson, architect. The old almshouses stood upon 600 yds., and the new buildings cover about 1,200 yds. There are eighteen female inmates, seven of whom are on the ground floor, and eleven on the first floor. The Stockton Dispensary is in the same buildings, and consists of two rooms. The overseers' office and the poor-rate office are also in the Mill-lane front of the building.

RESTORATION OF COURTEENHALL PARISH CHURCH, NORTHAMPTON.—The parish church of SS. Peter and Paul has just been re-opened and re-dedicated by the Bishop of Leicester, after having been restored. The restoration which has just been carried out is the continuation of a scheme of restoration commenced twelve years ago. The work has been done by Messrs. Branson & Son, Northampton, under the direction of Mr. William Hall, architect, Northampton. New choir stalls, and prayer desks, executed by Messrs. Evans and Filton, of Oswestry, have been placed in the church.

WESLEYAN CHAPEL, STANDISH, LANCASHIRE.—On the 13th inst. new Wesleyan chapel and schools at Standish, which are to cost about 3,000*l.*, were opened. Mr. Dinsley, of Chorley, was the architect.

NEW CHURCH, CARDIFF.—The nave and aisles of St. Teilo's Church, Cardiff, were dedicated recently by the Bishop of Llandaff. When completed, the total length of the church will be 138 ft., with seating accommodation for over 800 persons, and the building will comprise nave and aisles, with south porch, chancel, morning chapel, vestries, and organ space. The tower, for which the foundations are already built, will be 130 ft. high. The portion now completed provides seating accommodation for 750 persons, chairs being used. The choir seats, pulpit, and font are of a temporary character, having been retained from the old iron church. Messrs. S. Shepton & Sons, of Cardiff, have carried out the designs of the architect, Mr. George E. Halliday, Diocesan Surveyor for Llandaff, whose designs were selected in a limited competition.

BUSINESS PREMISES, BIRMINGHAM.—The new building in High-street, Birmingham, known as the Louvre, which has been built at a cost of 20,000*l.* for Messrs. Edwin Fletcher & Co., Limited, was opened on the 13th inst. The building has a frontage carried out in four colours of terra-cotta, and a tower rises to a height of 125 ft. The premises are fire-proof and electrically lighted. The ground-floor shop measures 100 ft. by 50 ft., and beneath it is a basement. The architects were Messrs. Essex, Nicol, & Goodman, and the builder was Mr. John Bowen.

CONGREGATIONAL CHAPEL, BARNSLEY, YORKSHIRE.—The new Congregational Chapel, Sheffield-road, Barnsley, was opened on the 13th inst. It has been built from the designs of Mr. G. Moxon, and is of stone. Approached by steps, the chapel is entered through vestibules. It has two aisles, and the open pews, like all the woodwork, are of pitchpine, stained and varnished. The building will accommodate between 400 and 500 worshippers.

BAPTIST CHAPEL, BEXHILL.—The foundation stone of the "Beulah" Baptist Chapel, at the corner of Gifford and Buckhurst-roads, has just been laid. The inside dimensions of the chapel will be 67 ft. by 36 ft. and there will be double transepts east and west 20 ft. by 7 ft. There will be two galleries—one at the north end to hold 120 persons and one at the south end to hold 30 persons. The total accommodation provided is for about 600 persons. The principal entrance, which will have vestibule and two lobbies, will be in Buckhurst-road. There will be a dwarf tower. There will also be an entrance from Clifford-road, at the North-east corner. The space under the south gallery will be utilised for an infants'-class-room in connexion with the school. The church parlour will be 18 ft. by 14 ft. The minister's vestry will be 15 ft. by 10 ft. In the space between the minister's vestry and the school there will be a class-room. The baptistry will be in front of the rostrum. The roof will be open timbered with trusses supported by stone corbels, and the windows will be filled with tinted glass in leaded lights. The exterior will be faced with red bricks, with tracery headed windows and quoins in Bath stone. The roof will be covered with Broseley tiles. The building will be heated

with hot water from a heating chamber under the church parlour. The contract for the erection of the building has been given to Mr. Charles Thomas, Bexhill. The architect is Mr. R. W. Moore, of Brighton.

GROSVENOR HOSPITAL FOR WOMEN AND CHILDREN.—The Princess Louise will open the new buildings in connexion with the Grosvenor Hospital for Women and Children, Vincent-square, Westminster, next Wednesday, at 4 p.m. Messrs. Roumieu & Aitchison have acted as honorary architects for the hospital and out-patients' department.

PARK HOSPITAL.—Mr. H. Hope (Birmingham) asks us to mention that his firm supplied all the wrought iron hopper ventilators throughout the hospital, and the glass-covered bridges for nurses' home.

ST. VINCENT'S CONVENT NEW CHURCH, CORK.—On the 16th inst. the Bishop of Cork dedicated the new church attached to St. Vincent's Convent, St. Mary's-road, Cork. The church, which is in the Early English style, comprises nave, aisles, side chapels, and two sacristies. The total length is 75 ft., and the width 52 ft. The height of the church from floor to ceiling is 45 ft. The sanctuary is laid with marble mosaic, and the altars and steps are of white marble. The floor of the choir is laid with oak parquetry. There is a large gallery for the organ at the end of the church. The building is faced with red bricks, from Ruabon. The dressings of windows and doors are of Portland stone. The work has been carried out by Messrs. E. & P. O'Flynn, builders, Cork, from designs, and under the superintendence of Mr. William H. Byrne, architect, Dublin. The altars were made and erected by Mr. Daly, of Cork, while Mr. William Flynn, decorator, Cork, is responsible for the decoration of the church.

HOTEL, NEWCASTLE, COUNTY DOWN.—The new Railway Hotel at Newcastle, County Down, is approaching completion. The hotel will contain about 120 bedrooms, with suites of sitting and bedrooms self-contained. The materials of which the hotel is being built are red Ruabon brick and Dumfries red sandstone dressings, with a plinth or base of Castlewellan granite. The roofs are being covered with Ellerwater green slates and copper. The architect from whose designs the works are being carried out is Mr. James J. Farrall, of Dublin, and the contractors are Messrs. H. & J. Martin, of Belfast.

SCHOOL, SWANSEA.—The foundation stone of the new wing to the Terrace-road Board School, Swansea, has just been laid. Mr. G. T. Lawrence is the architect, and Messrs. Bennett Bros. are the contractors.

FREE LIBRARY, ST. GEORGE, BRISTOL.—The foundation stone of a Free Library for St. George, Bristol, was laid recently by Mr. Augustine Birrell, Q.C., M.P. The site is on the main road, near the District Council offices, and the building is to afford accommodation for 300 readers at a time, with shelving for about 11,000 volumes. It will be a single-storied building, with Cattybrook brick facings, and Ham Hill stone dressings. Wood block flooring is to be laid, and a glazed dado will surround the walls for a height of 5 ft., the upper portion being of sandstone. The boys and the library department will be separated from the public hall by an arcading of Ham Hill stone arches, supported on granite columns. The contractors are Messrs. W. Cowlin & Sons, the architect being Mr. Frank Wills, while Messrs. Crispin & Sons have been entrusted with the heating arrangements.

MINERAL WATER FACTORY, NORWICH. — A mineral water factory has been opened in connexion with the Anchor Brewery, St. Miles's, Norwich, by Messrs. Bullard & Sons, Limited. The new factory is erected on the south side of Lower Westwick-street, and the premises extend from St. Lawrence's Church-alley on the east to St. Margaret's Church-alley on the west. Measuring 147 ft. 6 in. in length, with an average width of 60 ft., the factory is built of Surlingham red bricks, with white stone dressings. The principal department, which is known as the manufactory, is about 108 ft. long by 60 ft. wide. The floor is of concrete. The roof is open, the principals being supported by iron girders which rest upon iron columns. Eastward of the manufactory are the brewing-room and machine-room, with the sugar and syrup-rooms above. The building operations have been carried out by the company's building staff, under the direction of the surveyor, Mr. W. F. Horton.

ST. PETER'S CHURCH, LURGAN, IRELAND.—This church was reopened recently. The new building comprises nave and aisles, transepts, sanctuary, side chapels, and baptistry, and the dimensions are :—Nave, 130 ft. long by 26 ft. wide ; aisles, 83 ft. by 15 ft. each ; sanctuary, 26 ft. wide by 25 ft. deep ; transepts, 26 ft. wide by 33 ft. deep each ; side chapels, each 15 ft. by 13 ft. The total length of church from sanctuary to west front is 155 ft. ; total width across nave and aisles, 56 ft. ; and across transepts, nave, and aisles, 122 ft. From ground to cross of west gable is 60 ft. ; the height of sidewalls of nave, 38 ft. ; and of aisles, 20 ft. The baptistry is placed in the south aisle, and the tower terminates the north aisle. The principal entrance is through the west front by a wide double door, having a moulded arch in two orders, supported on polished Aberdeen granite columns, with moulded bases and carved caps. The tympanum is filled with Portland stone for future sculpture, and a projecting gablet with cross completes the doorway. An almost similar doorway gives access to the tower and north aisle, and a winding stone staircase leads to organ gallery from this entrance. The entrance to transepts is by a separate projecting porch. An inner, semi-octagonal porch encloses the main entrance. Each side of the nave is divided into five bays, and each transept is spanned by a single arch. An arch, with columns, &c., separates the aisles from transepts and the respond piers of sanctuary form the abutment for arching of side chapel and for communication between the latter and sanctuary. Red granite is introduced as columns to sanctuary and chapels. The confessionals are built between the buttresses of aisle walls. There are four confessionals—two in each aisle—but provision has been made for an additional one in each transept. The aisles are lighted by two single-light windows in each bay, and filled with lead lights, as are all the other windows. The walling of the church is of blue local stone, built in uncoursed rock-faced ashlar, and lined on the inside with brick. Drogheda limestone has been exclusively used for all windows and doors, arches, plinth, and string courses, weatherings, &c. It will also be the material employed for the spire. The expenditure up to the present has been close upon 10,000*l.*, and to complete the tower and spire a further sum of 3,000*l.* will be required. Mr. D. Macnaughton is the builder, of Randalstown. The marble altar was designed and made by Mr. E. Sharp, Dublin. The stained glass windows and Stations of the Cross are by Messrs. Mayer, of Munich. Mr. J. J. M'Donnell was the architect.

PUBLIC BATHS AND WASH-HOUSES, DUMFRIES.—The plans have just been approved, and the estimates let, for the new baths and wash-houses on the Greensands, Dumfries. The building is in two sections, the wash-houses block being a single story, and the part appropriated for the baths consisting of two stories. There are ten washing boxes. The laundry or ironing room measures 30 ft. by 20 ft. The rooms are to be lighted from the roof. The baths are in the two story section abutting on the river. The length of this block is 50 ft., and the breadth is 24 ft. The ground floor is occupied by the attendant's house. The baths are on the first floor. They are divided into two classes, with separate approaches. There are two first-class baths and four second class, as well as two spray and shower baths in separate chambers. All the baths are to be of white enamelled porcelain. The contractors for the building are :—Masons, Messrs. John Crackston & Son ; joiner, Mr. R. Finning ; slaters, Messrs. John Bridges & Son ; plumber, Mr. R. M. Glover ; plasterer, Mr. W. Bell ; painters and glaziers, Messrs. A. Muirhead & Son. The architect is Mr. James Barbour.

SANITARY AND ENGINEERING NEWS.

GRAVING DOCK, ABERDEEN.—Mr. H. H. Wake, C.E., Sunderland, the consulting engineer in this matter, recommends repairs by means of shut piling, and a widening of the entrance of the present dock.

WATERWORKS, &c., SHOEBURYNESS.—New sewerage and waterworks were opened at Shoeburyness recently. The various works were explained by Mr. G. R. Strachan, partner with Mr. Mansergh, the engineer. The first place visited was the site of the outfall for the New Cambridge Estate sewer. The party were then driven to the waterworks. Mr. Strachan said the water was obtained from a total depth of 475 ft. All the machinery was in duplicate, and they had been able to throw 200,000 gallons in twelve hours with a depression in the well of not more than 50 ft. The tower was 60 ft. high, and the tank at the top was capable of holding 43,000 gallons.

THE DISPOSAL OF LEEDS SEWAGE.—For some time past the Corporation of Leeds have been under threat of penalties by the West Riding Rivers Board if steps were not taken to improve their method of disposing of the sewage of the city. At a meeting of the Leeds Council a few months ago, when it was agreed to spend nearly £28,000 for constructing seven additional settling tanks and raising the level of one line of the existing tanks at Knostrop Sewerage Works, objection was taken to the proposal, on the ground that it was time that a complete and improved sewage system should be adopted for the entire city. On the occasion in question the Council voted the sum required on the assurance of the chairman of the Streets and Sewerage Committee that a complete scheme would shortly be laid before the Council. Steps have now been taken to prepare such a scheme. The decision was come to at a special meeting of the Streets and Sewerage Committee. A report was submitted showing the results of various sewage works in different parts of the kingdom. It was ultimately decided to call in an expert to advise as to the best treatment of the sewage in connexion with Leeds. In consequence of the mixed trade effluents of the city that have to be dealt with from the various manufactories it was found necessary to have such an opinion. The system which seems at present to find favour with the Committee is that of bacteriological filtration. The Committee, however, are pledged to no particular system.—*Yorkshire Post.*

PROMENADE, COLWYN BAY.—A new promenade is being constructed at Colwyn Bay, which will cost about 13,000*l.* The esplanade and roadway (20 ft. wide) extend from the railway station eastward about a mile, forming an inward curve below the embankment of the London and North Western Railway. The surface of the promenade varies in width from 40 ft. to 90 ft., and is being asphalted. It is provided with cart crossings, kiosks, lavatories, &c. It is also anticipated that it will eventually be lighted by means of electricity. The work is under the supervision of Mr. William Jones, engineer.

SEWERAGE SCHEME, NEWPORT PAGNELL, BUCKS.—At a recent meeting of the Newport Pagnell Rural District Council, the scheme of main sewerage and sewage disposal for the town was approved, after being fully considered by the Parochial Sanitary Committee, and it was decided to apply to the Local Government Board for sanction to a loan for carrying out the work. The scheme has been designed by Mr. D. Balfour, of Newcastle-on-Tyne and Edinburgh. The whole of the town is to be properly sewered with fireclay socketed pipes, and where subsoil is wet, Hassall's watertight jointed pipes are to be used, especially adjoining the Rivers Ouze and Ouzel. The sewage will discharge into an underground storage tank, from which it will be lifted by centrifugal pumps (driven by gas engines in duplicate) and forced through a rising main to the disposal works, where it will be specially treated by chemical or bacteriological tanks and land. Special means are to be taken also, by means of relief culverts, to prevent the flooding of the town during heavy rains.

DRAINAGE OF BILTON, HARROGATE.—A Local Government Board inquiry was held by Mr. W. O. Meade-King, M.Inst.C.E., as to sanction to a scheme of main sewerage and sewage disposal for Bilton, Harrogate, for the Knaresboro' Rural District Council. There was no opposition to the scheme, which has been designed by Mr. D. Balfour, of Newcastle-on-Tyne, and consists of main sewers to provide for the development of the district. The sewers will all converge to nine acres of land laid out on the broad irrigation principle, the sewage being first precipitated with alumino-ferric in large tanks. The effluent is to discharge into the river Nidd.

LOCAL SEWERS IN LONDON.—The London County Council have sanctioned, subject to a condition recommended by the Engineer, the construction of local sewers as follows :—Battersea : 150 ft. of 12-in. pipe and concrete sewer in Russell-street, Queen's-road. Fulham : 865 ft. of 12-in. pipe and concrete sewer in Brill-street, 210 ft. of 9-in. and 296 ft. of 12-in. pipe and concrete sewers in Byam-street ; 500 ft., 520 ft., 576 ft., and 352 ft. of 12-in. pipe and concrete sewers in Bylser-street, Edenvale-street, Elbe-street, and Elwick-street respectively ; 194 ft. of 9-in. and 310 ft. of 12-in. pipe and concrete sewers in Nilkie-street, and 670 ft., 780 ft., and 624 ft. of 12-in. ditto in Querrin-street, Townmead-road, and Tynemouth-street respectively, Sands End Estate. Hammersmith : 402 ft. of 12-in. pipe and concrete sewer in Blomfield-road. Hampstead : 100 ft. of 12-in. pipe sewer in Westbere-road, Powell Cotton Estate. Lambeth : 82 ft. of 12-in. pipe and concrete sewer in Elder-road, West Norwood. Lewisham : 422 ft. of 12-in pipe sewer in Grierson-road, Woolmore Estate, Honor Oak Park ; 1,770 ft. of 4 ft. by 2 ft. 8 in. brick and concrete sewer in Stanstead-road, and 305 ft. of 3 ft. 9 in. by 2 ft. 6 in. brick and concrete sewer in Waldram-road, and 211 ft. and 1,07[illegible] ft. of 12-inch pipe and concrete sewers in Devonshire-road and Dunoon-road respectively, Oakfield-estate. St. Marylebone : 50 ft. of 9-inch and 150 ft. of 12-inch pipe and concrete sewers in Clarence Terrace ; 445 ft. of underpinning of 4 ft. by 2 ft. 8 in. brick sewer in George-street ; 245 ft. of 12-inch pipe and concrete sewer in Huntsworth-mews south ; 205 ft. of underpinning of 4 ft. by 2 ft. 8 in. brick sewer in Little Barlow-street ; 155 ft. of 12-inch pipe and concrete sewer in North Bank ; 44 ft. of 5 ft. by 2 ft. 6 in. brick sewer in Salisbury-street ; 470 ft. and 205 ft. of 12-inch pipe and concrete sewers in Sussex-mews and Walmer-place respectively ; and 350 ft. and 240 ft. of underpinning of 5 ft. by 2 ft. 6 in. brick sewers in Walmer-street and Virgil-place respectively. Wandsworth : 900 ft. of 15-inch pipe and concrete sewer in Bleakhall-lane.

LONG BUCKBY WATER SUPPLY.—The Daventry District Council, having received seventeen schemes for this work, selected four for submission to Mr. John Eunson, C.E., of Northampton, who advised the acceptance of the project of Messrs. Usill, Browne, & Usill as "being the best and most practicable."

FOREIGN.

FRANCE.—The Académie des Beaux-Arts has awarded to M. Rouyer the prize founded by the late M. Bailly for the best architectural work constructed during the last two years. M. Rouyer, it may be remembered, was the architect of the Mairie of the Xth arrondissement, illustrated in the *Builder* of April 11, 1896.——M. Roty, the medallist, has presented to the Musée des Medailles the series of studies which he made for the new French coinage. —— On the eve of the National Fête the President of the Republic officially inaugurated the new Pont Mirabeau, the Rue de la Convention, and the Abattoirs recently completed on the left bank of the Seine. On the occasion of this triple solemnity M. Bouvard,

Director of Works, received the cross of Commander of the Legion of Honour; M. Injalbert, the sculptor of the statues on the bridge, was created Officier, and the grade of Chevalier was awarded to M. Moreau, the architect of the Abattoirs. The title of Chevalier was also awarded, as one of the National Fête honours, to M. Batteu, architect, of Lille.——A fine portrait medallion in bronze of Pasteur, by M. Patey, has just been placed against the outer wall of Pasteur's former laboratory at the Ecole Normale Supérieure.——The Gobelins manufactory has just completed the repair of three of the splendid tapestries which decorate the church of St. Remi at Reims. These tapestries, six in number, were offered to the church in 1531, by Robert de Lenoncourt; they represent various episodes in the life of St. Remi, and constitute a valuable historic document.——The Natural History Museum and the Industrial and Commercial Museum of Paris, which have been established for some time in the Palais des Arts Liberaux, have just been transferred to one of the buildings in the Jardin d'Acclimatation.——The bronze medallion portrait of Edmond de Goncourt, the novelist, by M. Lenoir, has been inaugurated at the cemetery of Montmartre.——The ancient church of Sceaux, built in 1476, is in course of restoration.——The monument in honour of President Carnot is to be inaugurated to-morrow (Sunday) at Limoges. It consists of a bronze statue of the late President, and a figure of a woman symbolising France.——The jury in the competition opened at Châlons-sur-Marne for the construction of a new college, has awarded the first premium to M. Albert Simon, of Reims; the second to M. Picart, of Epernay; the third to MM. Auguste Bahrmann and Léon Decaux, of Paris; and the fourth to M. Gillet, of Châlons-sur-Marne.——The death is announced, at the age of 73, of M. Lucien Harlingue, architect, of Paris, a member of the Société Centrale des Architectes, and the architect of many important buildings both in Paris and in the provinces.

GERMANY.—The Emperor William Monument at Cologne, which was unveiled by the Emperor last month, is said to be one of the best pieces of work of this kind in Germany. It is seldom that a monument immediately becomes popular in Germany, but judging from the general Press, and the innumerable photographs on view throughout the country, this seems to be the case with the Cologne memorial. The sculptor is Professor Richard Anders.——Charlottenburg is to have four new bridges, and the authorities promise that they are to be of considerable architectural pretension; a preliminary vote of 45,000*l.* has just been passed by the Municipality.——The Berlin Town Hall is to have a large piece of sculpture representing the River Spree. The sculptor is Herr Christensen, of Charlottenburg, and the work will be in marble.——The Berlin Tramway Company has now commenced negotiations with the various suburbs as to the prolongation of its various monopolies, prior to adopting the electric service. They have recently bought a site for a new tramway station at a cost of nearly 50,000*l.*——The suburb of Charlottenburg will have some new law courts by the end of the year, at a cost of about 25,000*l.* This suburb, which is in reality an independent township, has a population of nearly 150,000.——There is some interesting information respecting the effects of sea water on various cements, mortars, and concrete in the *Centralblatt der Bauverwaltung* of the 14th inst. Examples are taken from works both in the North Sea and in the Baltic.——There is to be another competition for the new Town Hall at Dessau. There will be no premium, as the successful candidate will receive the commission; but every architect invited to compete will receive a fee of 35 gs. towards his expenses.——The Regent of Meklenberg-Schwerin is having a castle built at Lubstorf, from the designs of Professor Haupt, of Hanover. The building will probably be completed this year.

MISCELLANEOUS.

PROFESSIONAL AND BUSINESS ANNOUNCEMENTS.—The St. Pancras Iron Works, St. Pancras-road, London, has been converted into a Limited Liability Company under the title "The St. Pancras Iron Work Company, Limited."——Mr. W. Griffiths, Stone Merchant, has removed his offices from 283, Kingsland-road to 35 to 39, Hamilton House, Bishopsgate-street, London, E.C.

SURVEYORSHIP APPOINTMENTS.—We learn that the Carpenters' Company have appointed Mr. H. Phillips Fletcher, F.S.I., A.R.I.B.A., as their Surveyor, in the place of Professor T. Roger Smith, who had held the appointment for many years, and who has now joined the Court of the Company.——Mr. Reginald S. A. Roumieu was appointed, on the 15th inst., Surveyor to the Girdlers' Company, and he has recently also been appointed Honorary Architect and Surveyor to the School for the Indigent Blind, St. George's Fields, S.E., a corporation established by Royal Charter.

BUILDING TRADES' EXCHANGE, EDINBURGH.—The Exchange of the Building Trades of the City and District of Edinburgh, 10, Shandwick-place, was opened on the 15th inst. by Mr. W. W. Robertson, Master of the Merchant Company. Mr. Peter Lawrence, President, occupied the chair. The Chairman, in introducing Mr. Robertson, said the Exchange was a federation of the building trades, along with the manufacturers, architects, surveyors, and others connected with those trades. That Exchange was one of the institutions for which they were indebted to America. They had present with them the founder of such institutions in this country—Colonel Bennet. Within the last two years combined meetings of representative builders and surveyors had been held, and they had now arranged, on strict lines, the rules and methods of the measurements of mason work. They were also empowered to proceed with the making of rules and regulations in regard to measurements for the other trades. Besides, the surveyors themselves had resolved to form a corporate body, and so ensure to their clients and the builders who worked for them that nobody but competent men would be engaged to do what was so important work.—Mr. Robertson, in declaring the Exchange open, said its foundation idea was one that must appeal at once to the builder and to every one who knew anything about the building trades. In nearly every town in America, and in Glasgow, there was such an Exchange, and it was right that Edinburgh, as a centre of good building, should not lag behind. Building a house now was not the simple thing it was a hundred years ago, and there was, therefore, need of men meeting to exchange ideas to work for a common good. That institution recognised that the wealth of the trades as a whole was what made for the wealth of the individuals. One of the objects of the Exchange was to promote uniformity in contracts and in the commercial usages of the building trades; another was to circulate information by literature; and they also proposed to grant diplomas for entrance in certain trades where they submitted themselves for examination, and to adjust controversies. After commending these objects, Mr. Robertson expressed the opinion that the Exchange was going to secure a great success. Success to the Exchange was afterwards drunk. Votes of thanks concluded the proceedings.

SALE OF PROPERTY.—On Friday, July 16, was sold some freehold property, consisting of six houses at the west corner of Old Bond-street and Piccadilly, and covering 3,210 ft. super, for 115,000*l.*, the purchasers being, we understand, the Prudential Assurance Company. The several premises are at present let for an aggregate of 2,410*l.* per annum, under leases which expire together seven years hence.

ELECTRIC LIGHTING, ECCLES.—On the 14th inst., at Eccles, Mr. W. A. Ducat held an inquiry on behalf of the Local Government Board into the application of the Town Council for permission to borrow 2,200*l.* for the extension of the Town Hall and municipal offices; 6,800*l.* for the purposes of street improvement, and 11,408*l.* for purposes of electric lighting. Mr. S. V. Clivehugh (consulting electrical engineer) explained the details of the scheme. The estimated cost of maintaining and running the proposed works, including 5½ per cent. for interest and sinking fund, was 1,608*l.* per annum. In order to obtain that they intended to light 185 public lamps, charging 2*l.* each per year, bringing in 370*l.*; and 2,476 private lamps of 16-candle power, each of which was estimated to bring in 10s., which was a low estimate. This made a total of 1,608*l.*

CITY IMPROVEMENTS, BELFAST.—Mr. Charles P. Cotton, M.Inst.C.E., Chief Engineering Inspector of the Local Government Board, attended at the Belfast Town Hall on the 16th inst., and held an inquiry into the application of the Corporation of Belfast, acting as the Urban Sanitary Authority for the district under the Public Health (Ireland) Act, 1878, for a loan of 125,000*l.* for improvements in the city. The improvements are specified as follow:—An electric-lighting station, 65,000*l.*; new police cells, 11,000*l.*; divisional fire-station in Whitla-street, 6,000*l.*; arterial sewers, 15,000*l.*; flagging footway, 5,000*l.*; street improvements, 23,000*l.* Evidence as to the desirability of the proposed improvements was given by the Lord Mayor and others, and plans for the new schemes were produced by Messrs. J. C. Bretland (City Surveyor), Jas. Munce (Assistant City Surveyor), V. A. H. M'Cowen (Electrical Engineer to the Corporation), and Tulloch (Messrs. Graeme, Watt, & Tulloch).

MEMORIAL BUST, DUBLIN.—On the 15th inst., in the Science and Art Museum, Kildare-street, the memorial bust to the late Dr. Valentine Ball, C.B., F.R.S., who was for many years a director of that institution, was unveiled by Judge Boyd. The bust, which was executed by Mr. J. Hughes, A.R.H.A., is of white Carrara marble, supported on a pedestal of Kilkenny marble, with a base of black Galway marble.

WINDOW, LONGRIDGE CHURCH, LANCASHIRE.—There has just been erected a stained glass window in the Church of St. Paul, Longridge. The centre figure is the Crucifixion, whilst on each side of the Saviour are the Virgin Mary, St. Peter, St. Paul, and St. John. Below these are figures of the four prophets, Isaiah, Jeremiah, Zechariah, and Micah. Above the Crucifixion scene are four bishops, whilst at the top portion of the window are four angels, the centre being the crown of victory. The smaller lights of the window are symbolical of the Crucifixion. The work has been carried out by Mr. C. E. Kemp, of London.

BIRMINGHAM GENERAL HOSPITAL.—Messrs. Morrison & Ingram, Sanitary Engineers (Manchester) ask us to mention that they carried out the whole of the sanitary fittings at this hospital, their work having been selected as the result of an inspection of samples of work submitted for examination.

APPOINTMENT OF SANITARY INSPECTORS.—The Local Government Board have sanctioned the appointments of Dr. E. G. Younger and Mr. R. Simpson as Sanitary Inspectors in Gray's-inn and St. George-the-Martyr, Southwark, respectively, and the re-appointments of the following Sanitary Inspectors:—Messrs. Hills, Gathercole, May, Simmons, Robbins, and Johnson in the City of London; and Messrs. Bennett and Freeman in Holborn.

CARDIFF TOWN HALL.—A meeting of the Cardiff Town Hall Committee was held on the 16th inst., to consider the Borough Engineer's epitome of requirements for the new Municipal Buildings. The suggested requirements were discussed at length, and some additions were made under various departments. It was resolved to approach Mr. Alfred Waterhouse, R.A., with a view to his acting as architectural assessor. Alderman D. Jones proposed placing the law courts on the western side—the police-courts attached on the north, with entrance from North-road—of the avenue, and the whole of the Municipal Buildings on the eastern side of the avenue, both at the southern end of the park, care being taken to reserve sufficient land for future extension. Mr. J. Munn seconded, and this was agreed to. Mr. F. J. Veall thereupon suggested that, in view of the two sets of buildings, they should have two competitions, the premiums to be divided thus—Town Hall, 300*l.*, 200*l.*, and 125*l.*; Law courts, 200*l.*, 100*l.*, and 75*l.* Mr. J. Munn objected that this might result in two styles of architecture. Mr. Veall did not press his suggestion. It was resolved to submit the requirements and conditions to Mr. Waterhouse.

CAPITAL AND LABOUR.

IPSWICH BUILDING TRADE DISPUTE.—The following is the arbitrators' award in the dispute between the Ipswich Building Trades Association and the Amalgamated Society of Carpenters and Joiners, Ipswich Branch. "All work done after the completion of a ten hours' working day on any other day than Saturday, and a six-and-a-half hours' working day on Saturday shall be considered as overtime. In addition to ordinary wages, overtime shall be paid for at the following rates, namely:—For the first and second hours at the rate of one penny per hour, for the third and fourth hours at the rate of two-pence per hour, and for the fifth, sixth, and all subsequent hours at the rate of fourpence per hour. All work done on Sunday and Christmas Day shall be paid for at the rate of double time." The arbitrators were Messrs. George F. Josselyn, Fred. H. Fosdick, John Hervey, and Edward J. Gilchrist.

LEGAL.

ALLEGED INTERFERENCE WITH ANCIENT LIGHTS AT BRIGHTON.

THE case of Christy *v.* The Mayor, Corporation, and Burgesses, of Brighton, came before Mr. Justice North in the Chancery Division of the High Court of Justice on the 17th inst., when Mr. Fossett Lowe applied *ex parte* on behalf of the plaintiff for an interim injunction to restrain the defendants from carrrying their new Town Hall to a greater height than it is at present. The learned Counsel stated that the original building which the defendants had pulled down was only 20 ft. high and they had now carried their new building to 28 ft. which materially interfered with the plaintiff's ancient lights in the "Three Tuns" at Brighton.

His Lordship granted the injunction until the 23rd inst. (yesterday) with leave to serve notice of motion for that day.

LIGHT AND AIR CASE:

TUCKER AND OTHERS V. TAUNTON MANUFACTURING COMPANY.

THIS case was heard before Mr. Justice Day without a jury at the Bristol Assizes. Dr. Hodges, Q.C., and Mr. Duke (instructed by Mr. Poole, Taunton) were for the plaintiffs, and Sir Walter Phillimore, Q.C., and Mr. Foote (instructed by Mr. Shearman, of London) were for the defendants.

The case arose in consequence of the erection by the defendants of a stock room immediately opposite and 7 ft. 6 in. away from the windows of class rooms used in connexion with the school belonging to the plaintiffs. The plaintiffs contended that this erection rendered the rooms unsuitable for class rooms, and claimed that the height of the building should be reduced.

Mr. Basil Cottam, of Bridgwater, was called on behalf of the plaintiffs, and he produced plans and sections and a model showing the position of the plaintiffs' and defendants' properties both before and after the erection of the stock room. The other professional witnesses were Mr. William Eve, of London, and Mr. Williams, of Bristol.

The defendants called Mr. H. H. Collins and Mr. W. Gibbs Bartleet, both of London, who contended that in considering the matter the angle should be taken from the centre of the window which was

6 ft. 9 in. from the floor, the height of the room being less than 10 ft., and that such line should be taken to the eaves, disregarding the roof, which was hipped.

The judge complied with the request of the plaintiffs and granted a mandatory injunction ordering the defendants to pull down the building to the line laid down by Mr. Eve, and gave the plaintiffs their costs.

ACTION BY THE CORPORATION OF LEEDS:

CASE IN THE QUEEN'S BENCH DIVISION.

THE case of the Mayor and Corporation of Leeds *v.* Lord Hawke came before Mr. Justice Vaughan Williams for judgment in the Queen's Bench Division on the 16th inst., it being an action brought by the Corporation of Leeds against the defendant as trustee of the estate of Mr. John Miles Dawson, to recover the expenses of paving a certain street in Leeds. The principal question in the case was whether the street was a highway that had been repaired by the district in which it was situated. The Leeds Improvement Act, 1842, Section 135, provides that, "where any street (not being a highway repaired by the township or district in which the same shall be situate and not being a turnpike road) is now, or shall at any time hereafter be, formed or set out within the limits of this Act, and shall not be sufficiently paved, flagged, levelled, drained, and sewered, to the satisfaction of the Council, it shall be lawful for the Council at any time. . . . . to order that such street, or any part thereof, shall be paved, flagged, &c. . . . . and thereupon the respective owners of the tenements adjoining and abutting upon the said street on each side thereof shall. . . . . at their respective charges well and sufficiently pave, flag, &c., so much of the said street as shall be opposite to and co-extensive with their respective tenements adjoining or abutting on such street respectively." Section 136 provides that in case of neglect by the owners to do the work the Council shall have power to do it themselves and charge the owners with the expense. Section 50 of the Leeds Improvement Act, 1869, provides: "If any street which shall be ordered to be paved, flagged, levelled, sewered, or drained, in the 135th Section of the Act of 1842, shall not have been actually repaired by the surveyors of highways before March 20, 1836, the same shall not be deemed to be a highway within the meaning of that section." It appeared that Mr. Dawson was the owner of houses abutting on a street called Club-terrace, Leeds. In May, 1891, the plaintiffs gave him notice to pave the street, and on his neglect to comply with the notice the plaintiffs did the work themselves. Mr. Dawson refused to pay the expenses, and proceedings were threatened against him in May, 1892. Mr. Dawson died in 1896, and the proceedings were now taken against his trustee. The plaintiffs contended that the onus of proving that the road was repaired by the district lay on the owner. The defendant, however, contended that the onus lay on the plaintiffs.

His lordship gave judgment for the plaintiffs. He said he was of opinion that the affirmative onus imposed by Section 50 of the Act of 1869 was thrown on the plaintiffs as the road authority; but he came to the conclusion, in fact, that there was some evidence in support of the negative which the statute had so inconveniently thrown on the road authority. He doubted whether the framer of the Act intended to throw the onus on the road authority; but he seemed to have done so. But taking the whole of the evidence, and considering the state of the road at and after March 20, 1836, it had been proved that the road had not, prior to that date, been repaired by the surveyor.

Judgment for the plaintiffs accordingly.

Mr. Kershaw, Q.C., and Mr. George Banks appeared for the plaintiffs; and Mr. Tindall Atkinson, Q.C., and Mr. Bromet, for the defendant.

NEW OR OLD DRAIN?

AT the Lambeth Police-court recently, Mr. Chas. Whillier, a builder, and Mr. R. D. Duncan, a solicitor, were each summoned by Mr. Julius Jones, a sanitary inspector in the service of the Lambeth Vestry, for having, at a house in Loughborough-street, Lambeth, in carrying out some drainage work, failed to comply with the regulations of the Vestry. The house in question was formerly drained by an old brick drain, which became stopped up. Mr. Whillier, by the directions of Mr. Duncan, acting, it was said, as solicitor to the owner of the premises, took away the old brick drain, and, on the channel taken by the old drain, put down a pipe drain.

Mr. H. J. Smith, who supported the summonses on behalf of the Vestry, argued that what had been done amounted to the construction of a new drain, and contended that the Vestry were entitled to enforce compliance with their regulations relating to new drains, which require the fixing of an intercepting trap between the drain and the sewer, and the provision of inlet and outlet shafts. The view taken by Mr. Duncan was that this was a repair to an existing drain, and that the Vestry were consequently not entitled to require the extra work to be done.

Mr. Denman remarked that if a man took a spade and dug a hole in the field, and water flowed through it, it was a drain. If he bricked it over it was still a drain; if he took away the bricks and replaced them with pipes, it was still a drain—the same old drain altered and repaired, but not a new drain. A drain, it seemed to him, was the channel along which the drainage went. In this case he thought the drain was altered and repaired. The meaning conveyed to his mind by the word "drain" was the line or channel through which the drainage went. The old drain was there, the channel had not been altered, but it had been repaired and made better than it was before, although it did not comply with the requirements which the Vestry were entitled to insist upon if it were a new drain, but which they were not entitled to insist upon if it were not a new drain. The summonses would be dismissed, with 3*l.* 3s. costs against the Vestry.

In response to a question by Mr. Smith, his Worship said he would state a case if the Vestry desired it.

MEETINGS.

SATURDAY, JULY 24.

Architectural Association.—Summer visit to Oxford. Leave Paddington station at 9.50 a.m.

RECENT PATENTS:

ABSTRACTS OF SPECIFICATIONS.

13,356.—WATER WASTE PREVENTORS: *A. Hocking.*—Inventor claims an improved arrangement and combination of parts in self-acting flushing-tank for latrines, or multiple closets, drains, sewers, &c., consisting of a syphonic container, automatic tipper, discharging into tank, diaphragm two-armed lever, and dead-weight valve connexion, also a container, syphonic or otherwise, suspended so as to open the dead-weight valve.

13,762.—EMBOSSED SHEETS FOR MURAL DECORATION, &c.: *H. A. Allport.*—For embossing sheets of asbestos or asbestos combined with other materials, inventor employs two plates, one of metal, engraved with design in intaglio, the other having its engraved surface first covered with copal varnish, and then an uncured vulcanite compound, or the following mixture kneaded into the indentations of plate:—

	lbs.		lbs.
Indiarubber.....	18	Asbestos fibre	2
Oxide of zinc	10	Asbestine (powder)..	6
Ferric oxide.....	9	Magnesia Oxide....	6
Whiting	11	Antimony.....	9
Sulphur.....	20	Actinolite.....	9
			100

A thick flat sheet of same material is then laid over plate, on this an iron one, and the whole placed in hydraulic press. When unclamped, the result is a male vulcanite plate adhering to iron plate accurately corresponding to the engraved female plate. When varnish has been cleaned off from engraved plate, inventor uses plates for embossing sheets of asbestos, &c. Rollers are similarly manufactured.

13,816. — PAINT BRUSHES: *W. M. Reinstein and Another.*—Inventor adopts in paint brushes, &c., an elastic spring or indiarubber band to be placed partly round handle and partly round hair of brush. In lather brushes he adopts an elastic band with a ring at one end.

16,676.—WATER CLOSETS AND URINALS: *J. Duckett & Sons, Limited, and Another.*—Invention consists in the combination of a top-flushed, wash-down, slop-water closet with an automatic tilting vessel and container and connecting pipe; also in arrangement of a fresh water-closet basin and flushing cistern placed below closet seat, and in some other application of the principle involved.

17,061.—VENTILATORS: *W. J. Fox.*—Invention consists in improvements in construction of ventilators formed in the shape of a tube or box, having filtering material on both sides, in conjunction with a framework of wood, &c., and end blocks and stays, the whole forming a receptacle, which may contain a disinfecting or odorizing medium. Various species of receptacles are described.

17,078.—PAINT AND ITS PRODUCTION AND APPLICATION: *H. W. Aird and Another.*—Invention has mainly in view painting of the bottoms of vessels. Inventors' compound graphite (preferably Canadian) with "japan." The vehicle and graphite are mixed, ground to a paste, and thinned with spirits of turpentine and linseed-oil. On smooth surfaces paint is applied in usual manner, and then rubbed down when dry with pumice-stone, &c. On rough surfaces it is dusted over with dry graphite while still "tacky," and then rubbed.

9,792.—CHISEL FENCE: *C. J. Connock.*—Inventor adopts, in an adjustable chisel fence, a metal casting, channelled out to receive chisel, curved on the under or face side, having a steel mouthpiece fixed to fence by means of wings, brazed to the inner sides of casting, which may be attached to chisel by means of a lever and set screw.

NEW APPLICATIONS FOR LETTERS PATENT.

JULY 5.—15,929, J. Kilson, jun., Fastenings for Windows.—15,930, F. Johnson, Window Fasteners.—15,931, R. Phillips, Sash Fasteners.—15,932, L. Elstein, Ventilating Rooms, Buildings, &c.—15,942, T. Miles, Sash Fasteners.—15,947, W. Edwards, Window Sash Fastener.

JULY 6.—15,998, M. Adams, Closets.—16,005, D. Booth, Traps for Sanitary or Drain Pipes.—16,010, H. Bekking, Apparatus for Grinding Tools.—16,027, A. Grayson, Double Dovetail Fixing Brick.—16,046, D. Roberts, Window Sash Fastener.—16,056, G. Meserve, Plastering Walls.—16,058, J. Hardie, Window Sash Fastener.—16,059, J. Owen, Fastening for Sashes.—16,071, A. Shepherd, Window Sash Fastener.—16,079, R. Gurden and H. Williams, Brick Making Machines.—16,100, P. Barth, Window Fastener. 16,101, P. Gray, Sash Fasteners.

JULY 7.—16,129, F. Bryant, Sash Fasteners.—16,131, H. Gregg, Sash Fasteners.—16,140, D. Anderson, Window Sash Fastener.—16,142, J. Todd, Window Sash Fasteners.—16,143, M. Watson, Facilitating the Formation of Branch Joints between Pipes, or Pipes and Cocks.—16,156, J. Butt, Window Sashes.—16,157, S. S. Resden, Sash Fasteners.

JULY 8.—16,163, G. Watts, Window Sash Fastener.—16,164, J. Rowland, Sash Fasteners.—16,165, S. Cooper and S. McDougall, Kilns for Burning Bricks, Tiles, Pipes, Terra-Cotta, &c.—16,183, A. Wild, Hinges.—16,197, C. Braunsteiner, Carving Machine for Hollowing Out the Angular Grooves of Window Frames.—16,199, T. Williams, Window Sash Fasteners.—16,200, O. Cox and E. Angove, Sash Fasteners. — 16,204, D. Jenkins, Window Sash Fasteners.—16,211, C. Huess, Sash Fastener.—16,212, R. Bardo, Sash Fasteners.—16,235, W. Thompson, Window Sashes.

JULY 9. — 16,260, E. Hugues, Cement Building Materials.—16,262, J. Lucas, Carrying and Swivelling Sliding and Folding Doors, &c.—16,291, W. Freeman, Window Sash Fasteners.—16,293, J. Jones, Window Sash Fasteners.—16,294, A. Cleverly, Sash Fasteners.—16,301, T. Bennett, Sash Fastener.—16,302, R. Packer, Sash Fasteners.

JULY 10.—16,345, W. Davis and E. Field, Window Sashes and Window Frames.—16,368, A. Gillingham, Ventilating Cowl for Buildings and Chimneys.—16,375, A. Fordyce, Metallic Lathing.—16,392, H. David, Window Sash Fastener.—16,393, J. McKenzie, Joint for Stoneware Drain Pipes.—16,394, W. Hawkins, Sash Fasteners.—16,396, E. Potter, Window Sash Fasteners.—16,397, E. Morgan, Sash Fasteners.

PROVISIONAL SPECIFICATIONS ACCEPTED.

11,895, J. Hart, Window Sash Fittings.—11,925, H. Coward, Construction of Fireproof Floors.—12,006, A. Constable, Stop Gates for Sewage and Irrigation Purposes, and for Flushing Manholes in Sewers.—12,241, E. Waddington, Brickmaking.—13,065, S. Jablónski, Isolating and Fireproof Material.—13,674, J. Mellor, Window Frame and Balances for Sashes thereof.—13,675, J. Langston, Case for Doors, Windows, &c.—13,901, W. Defries and F. Felloes, Constructing Glass Windows, Illumination Devices, &c.—14,216, R. Wilson and S. Goodman, Frames for Pavement Lights, Lenses, and Tiles, and the Method of Fixing therein.—14,553, G. Ellison, Hot-water Supply Apparatus for Houses.—14,768, J. Anderson, Window Sash Fastener.—14,815, A. Manning, Sash Fastener.—14,817, W. Sykes, Pipe Joints.—14,841, J. Langston, Construction of Buildings.—14,943, T. Fawcett, Machinery for Making and Cutting Slabs, Tiles, &c., and also Improvements in Brickmaking Machinery.—14,965, J. Taylor, Catches for Show Case Doors, &c.—14,967, F. Drake and F. Dyson, Ventilating Buildings.—14,973, T. Morgan, Window Sash Fasteners.—14,985, B. Forster, Window Sash Fasteners.—14,992, J. Backhouse, Exhibition Buildings.—15,000, W. Kenham, Window Sash Fasteners.—15,025, J. Brook, Hinges for Doors, &c.—15,116, E. Pease, Fireproof Flooring and the like Structural Arrangements.—15,218, A. Spratley, Fastenings for Windows, &c.—15,219, J. Lewis, Window Sash Fasteners.—15,220, W. King, Window Sash Fasteners.—15,224, E. Howell, Window Sash Fasteners.—15,235, J. Amyes, Window Sash Fastener.—15,255, B. Thomas, Window Sash Fastener.—15,310, J. Willett, Sash Fasteners.—15,311, W. Jones, Fastening for Windows.—15,316, F. Williams, Fastenings for Windows.

COMPLETE SPECIFICATIONS ACCEPTED.

Open to opposition for two months.

15,077, T. Wakeling, Manholes and Covers to Sewers.—17,639, J. Gibson, Flushing Apparatus for Water-closets.—19,177, J. Shanks, Siphonal Cisterns for Water-closets, &c.—19,424, J. Spragg and W. Bowler, Feed-water Heater for Steam Boilers.—19,922, A. Plummer, Drain Pipe Sewers and such like Conduits.—20,153, A. Erklin, Windows.—3,523, A. Kneale, Step Ladder, Applicable also as an Artist's Easel.—4,693, N. Simmons, Flushing of Soil Pipes, &c.—12,472, V. Mahler, Opening and Closing Windows.—12,804, W. Pettit and Others, Window Sash Holders.—13,982, J. Quigley, Bricks.—14,068, J. Fisher, Fireproof Ceilings and Partitions.—14,192, H. Jones, Nails.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

June 30.—By E. STOOK (at Hereford).

Hereford.—1 to 4, Hawthorn-villas, f., r. 55*l.* 4s. ...	£975

July 1.—By J. W. TRUMAN (at Masons' Hall Tavern).

Whetstone, Middlesex.—High-st., "The Bull and Butcher" p.-h., u.t. 46¾ yrs., r. 85*l.*, with goodwill	3,400

By F. ELLEN & SON (at Newbury).

Kingslere, &c., Hants.—"Knightsbridge Farm," 121 a. 1 r. 30 p., f.	3,000

By N. W. ROBINSON (at Hemel Hempstead).

Hemel Hempstead, Herts.—"Bennett's End Farm," 53 a. 1 r. 10 p., f.	1,550
A freehold cottage and enclosures, 20 a. 1 r. 20 p., f.	520

By W. ARNOTT & SON (at Woodbridge).

Hasketon, Suffolk.—"The Grange Farm," 103 a. 2 r. 31 p., f. and c.	1,950
Burgh, &c., Suffolk. — "Spurlings Farm," 101 a. 3 r. 13 p., f. and c.	1,500
Woodbridge, Suffolk.—"Grove Cottage," and 38 p., f.	225

By H. HENDRIKS (at Birmingham).

Birmingham.—291 and 291a, Monument-rd., r. 80*l.*; also l.g.r. 3*l.* 13s. 10d., u.t. 52 yrs., g.r. 16*l.*...	910
344, 345, 346, 348, 349, and 350, Monument-rd.; also six houses in Linden-ter., u.t. 53 yrs., g.r. 71*l.* 6s. 8d., r. 387*l.* 16s.....	2,870
39, 39a, 40, 42, and 43, Belmont-row, u.t. 33¾ yrs., g.r. 15*l.* 14s. 3d., r. 91*l.*	380
Harborne, Staffs.—Bearwood-rd., "The Wren's Nest," f.....	710
Wood-lane, "Oak Tree Cottage," u.t. 96 yrs., g.r. 9*l.* 18s. 4d., r. 26*l.*	300

By ALLAN BOOTH.

Holloway.—297, Camden-rd., u.t. 49 yrs., g.r. 4*l.*, e.r. 65*l.*	530

By W. B. HALLETT.

Leigh, Essex.—Station-rd., "Inglenook," f., r. 30*l.*	390

By FIELD & SONS.

Southwark.—237 to 253 (odd), Tabard-st., f., r. 269*l.* 4s.....	2,690
4 and 5, Law-st., f., r. 20*l.* 16s.	125
Law-st., f.g.r. 12*l.* 10s., reversion in 63 yrs.	315
Poplar.—228 and 230, East India Deck-rd., f., e.r. 140*l.*	1,870
Anerley.—2, Thornsett-villas, f., r. 30*l.*	460

By W. HOLCOMBE & BETTS.

St. John's Wood.—47, Grove End-rd., u.t. 19 yrs., g.r. 29*l.*.....	1,300

By R. TIDEY & SON.

Canonbury.—22, Quadrant-rd., u.t. 48 yrs., g.r. 7*l.* 10s.	565
De Beauvoir Town.—33 to 47 (odd), Hertford-rd., u.t. 22 yrs., g.r. 21*l.* 5s.	1,085
19 and 21, Stamford-rd., u.t. 18½ yrs., g.r. 12*l.*, r. 76*l.*.....	400

By WRIFORD & DIXONS.

Sunbury, Middx.—Hanworth-rd., "The Sunbury Nursery" and 3¼ a., f., r. 70*l.* £1,300
Clapham.—43, Elms-rd., u.t. 83 yrs., g.r. 10*l.*, e.r. 50*l.* 490

By ORGILL, MARKS, & ORGILL (at Masons' Hall Tavern).

Marylebone.—Marylebone-rd., "The Pontefract Castle" p-h., with goodwill, and two shops adjoining, u.t. 60 yrs., r. 300*l.* 49,500
Wormwood Scrubbs.—Latimer-rd., "The North Pole" p-h., with goodwill, and house adjoining, u.t. 75, 79 and 46 yrs., r. 85*l.* 33,800

By W. H. & J. A. EADON (at Hope).

Hope, Derby.—"Nether Ashop Farm," 59 a. 1 r. 22 p., f. 1,150
Thornhill, Derby.—Moiety of three houses and 3 a., f. 250

By AMOS DUERDEN (at Colne).

Kelbrook, Yorks.—"Tunstead Farm," 90 a. 2 r. 39 p., f. 3,400

By R. THIRNBECK (at Sedbergh).

Sedbergh, Yorks.—"Garsdale Rigg Farm," 45 a., f. 1,800

July 1.—By C. C. & T. MOORE.

Commercial-rd. East.—9 and 15, Newbold-st., u.t. 31 and 33½ yrs., g.r. 7*l.* 10s. 420
35, 37, 39, and 41, Nelson-st., u.t. 9¾ yrs., g.r. 10*l.*, r. 80*l.* 300
Whitechapel.—9, 10, and 11, Rutland-st., u.t. 9½ yrs., g.r. 6*l.* 260
5, Oxford-st., u.t. 12¾ yrs., g.r. 2*l.* 15s. 80
Mile End.—1, Dudley-ter., u.t. 70 yrs., g.r. 4*l.* .. 330
Stepney.—19, Copley-st., u.t. 45½ yrs., g.r. 4*l* 260
Forest Gate.—20, 22, 24, and 26, Ramsey-rd., u.t. 86½ yrs., g.r. 20*l.* 700
Bow.—23, British-st., u.t. 73¾ yrs., g.r. 4*l.* 10s., r. 32*l.*; also 25 and 27, British-st., f., r. 56*l.* 1,130

By HORACE DOVE.

Notting Hill.—44, Elgin-cres., u.t. 64 yrs., g.r. 15*l.* 470

By F. JOLLY & CO.

Clapton.—52, Cricketfield-rd., f., r. 34*l.* 490
Stoke Newington.—26, Fountayne-rd., u.t. 80 yrs., g.r. 10*l.*, e.r. 65*l.* 730

By STIMSON & SONS.

Camberwell.—300, Camberwell New-rd., u.t. 58 yrs., g.r. 7*l.*, e.r. 40*l.* 340
Wandsworth.—181, Wandsworth-rd., u.t. 10½ yrs., g.r. 18*l.* 18s., r. 70*l.* 310
Brooklands-rd., &c., i.g.r. 103*l.* 7s., u.t. 12½ yrs., g.r. 8*l.* 650
Merton.—1 to 4, Bathurst Villas, u.t. 92 yrs., g.r. 18*l.* 660

July 2.—By VICTOR VAUGHAN.

Wandsworth.—Lydden-rd., f.g.r., 12*l.* 12s., reversion in 70 yrs. 280

By A. J. SHEFFIELD.

Bromley.—94, 96, and 98, Bruce-rd., also l.g.r. 7*l.* 10s., u.t. 65 yrs., g r. 10*l.* 650
40, Eagling-rd., u.t. 65 yrs., g.r. 4*l.* 1s. 220
Limehouse.—17, 19, 21, and 23, Parnham-st., u.t. 15½ yrs., g.r. 11*l.* 11s. 435
Bethnal Green.—1 to 6, Tuscan-st., u.t. 50 yrs., g.r. 27*l.* 780
Poplar.—48, Benledi-st., u.t. 76 yrs., g.r. 5*l.* 10s., e.r. 50*l.* 275
West Ham.—41 and 43, Park-rd., f., r. 62*l.* 8s. 710

By WYATT & SON (at Southampton).

Southampton.—Shirley Warren, Three plots of land with cottages thereon, about 5 a., f. 890
Enclosures of land, 2 a. 0 r. 12 p., f. 525
Three building plots, f. 400

By T. RULE OWEN & SON (at Haverfordwest).

Furzey Pk., &c., Pembroke.—Enclosures and three cottages thereon, 21 a. 3 r. 8 p., f. 1,210
Haroldstone West, Pembroke.—"Broomsgrove Cottage" and 30 a. 3 r. 6 p., f. 380
Steynton, Pembroke.—Three enclosures, 32 a. 3 r. 8 p., f. 1,555
"Thornton House" and 6 a. 0 r. 4 p., f. 815
A homestead, two cottages, and 2 a. 3 r. 10 p. f. 477
Enclosures of land, 26 a. 3 r. 23 p., f. 1,400
Haverfordwest, Pembroke.—"Rack Hills" and 5 a. 1 r. 4 p., f. 415
Walton West, Pembroke.—Farmhouse and 11 a. 1 r. 16 p., f. 660
A house and cottage, 32 perches, f. 142

By T. W. GAZE (at Diss).

Scole, Norfolk.—"Street Farm," 44 a. 1 r. 3 p., f. 850
Diss, Norfolk.—Seven freehold houses, r. 49*l.* 16s. 760
Mellis, Suffolk.—Cowpasture Farm, 103 a. 3 r. 35 p., f. 1,000
"Ash Tree Farm," 77 a. 2 r. 34 p., f. 925

By EGERTON, BREACH, & GALSWORTHY (at Twickenham).

Twickenham, Middx.—Crane-rd., &c., sixty-four plots of building land, f. 2,059

July 3.—By C. M. STANFORD (at Colchester).

Great Bromley, Essex.—"Great Bromley Hall Estate," 145 a. 2 r. 4 p., f. 3,500
East Mersea, Essex.—"Weir's" and "Boarded Barn" Farms, 76 a. 3 r. 15 p., f. 550
Three enclosures, 24 a. 1 r. 9 p., f. 150

By SEXTON & GRIMWADE (at Colchester).

Ardleigh, Essex.—"Lodge Farm," 80 a., f. 1,000

By PAXTON & HOLLIDAY (at Oxford).

Islip, Oxon.—A building plot, 1 a. 3 r. 12 p., f. 125
An enclosure of land, 15 a. 2 r. 28 p., f. 570

July 5.—By MATTHEW MILES.

Holborn.—Nos. 123 and 124 ("The Old Bell") area 7,200 ft., a building lease for 80 yrs., g.r. 750*l.*, with licence attached 11,600

By J. H. BETHELL.

Upton Pk.—Cromwell-rd., f.g.r. 18*l.*, reversion in 90 yrs. 500
Forest Gate.—Westburg-rd., f.g.r. 10*l.* 10s., reversion in 89 yrs. 275
Upton Park.—St. Stephen's-rd., f.g.r. 12*l.*, reversion in 90 yrs. 320
Whitfield-rd., &c., f.g.r. 28*l.*, reversion in 86yrs. 785
Whittaker-rd., f.g.r. 17*l.* 10s., reversion in 86 yrs. 490

By GREEN & PILDITCH.

Stepney.—48 and 50, White Horse-lane, f., r. 53*l.* 8s. 685
4 to 48 (even), Cadiz-st., f. 5,080
79 to 95 (odd), Bridge-st., f. 2,305

By S. WALKER & SON.

City of London.—Upper Thames-st., a plot of land, area 440 ft., f. 1,810
Monument-st., two plots of land, area 1,020 ft., f. 3,500
Monument-st., a plot of land, area 420 ft., f. 1,400

By W. R. NICHOLAS & CO. (at Reading).

Caversham, Oxon.—Gosbrook-rd., "Ivy Cottage," f., r. 30*l.* £425
Gosbrook-rd., twelve plots of building land, f. .. 101
Aborfield, Berks.—"Targetts Farm," 16 a. 2 r. 7 p., f. 710

By R. DALTON (at Carlisle).

Burgh-by-Sands, Cumberland. — "Moorhouse Farm" and 189 a. 0 r. 34 p., f. 5,000

By C. F. MOORE (at Cirencester).

South Cerney, Glos.—"Cerney Wick Farm," 148 a. 2 r. 30 p., f. 3,000

By R. & W. BADCOCK (at Abingdon).

Steventon, Berks.—"Lane End Farm," 65 a. 2 r. 26 p., f. and c. 1,525
Various enclosures of land, 156 a. 3 r. 26 p., f. and c. 1,815
"Pike's Farmhouse," four cottages and 2 a. 0 r. 38 p., c. 466
House, Bakehouse, and "Plumhouse Close," 3 a. 1 r. 14 p., f. 450
Sutton Courtney, Berks.—"Hulgrove Meadow," 12 a. 2 r. 7 p., f. 200

By FRANK LLOYD (at Wrexham).

Wrexham, Denbigh.—Two cottages and 4 a. 1 r. 24 p., f. 440
"Pendwllyn Farm," 4 a. 3 r. 20 p., f. 360
Three enclosures, 5 a. 1 r. 12 p., f. 455
Gwersyllt, Denbigh.—Enclosures of land, 33 a. 2 r. 16 p., f. 1,810
Broughton, Denbigh.—The Broughton Farm, 31 a. 3 r. 30 p., f. 2,200

July 6.—By BROAD & WILTSHIRE.

Strand.—Wych-street, f g.r. 60*l.*, reversion in 23¾ yrs. 1,700
Drury-ct., f.g.r. 60*l.*, reversion in 90 yrs. 1,550
Wanstead.—7, Mornington-ter., f., r. 100*l.* 2,150

By GIDDY & GIDDY.

Mapledurham, Oxon.—"Dunelm" and ¾ a., u.t. 92 yrs., g.r. 20*l.* 750
Regent's Pk.—41, Avenue-rd., u.t. 8 yrs., g.r. nil, e.r. 150*l.* 260

By HARDS & BRADLY.

King's-cross.—55, York-rd., u.t. 63¾ yrs., g.r. 5*l.*, r. 36*l.* 355

By C. & H. WHITE.

Tooting.—39, 41, 43, and 45, Tooting-grove, f., r. 75*l.* 8s. 845

By W. N. WILLOUGHBY.

Dulwich.—28, Court-rd., u.t. 81 yrs., g.r. 13*l.*, r. 85*l.* 960

By DUNCAN & KIMPTON.

Norwood.—199, Gipsy-rd., f., r. 36*l.* 610

By EASTMAN BROS.

Sydenham.—44, Kirkdale, f., r. 120*l.* 2,150

By OSBORN & MERCER.

Willesborough, Kent.—"Sprotlands," and 138 a. 1 r. 32 p., f. 6,775

By WALTER SIMMONDS.

Peckham.—40 to 48 (even), Grenard-rd., u.t. 67½ yrs., g.r. 25*l.* 990
Addiscombe.—Ashburton-rd., "Seathwaite," f., r. 55*l.* 735
Peckham.—38, 40, and 42, Rosemary-rd., u.t. 69 yrs., g.r. 15*l.* 485

By MATTHEW MILES (at Winchester House.)

Somers Town.—Stibbington-st., "The Eastnor Castle" p.-h., f., r. 70*l.* 4,700
Chalton-st., "The Victoria" p.-h., f., r. 100*l.* .. 8,410
Chalton-st., "The Somers Town Coffee House" p.-h., f., r. 26*l.* 11,100
Gee-st., "The Jubilee," p.-h., f., r. 129*l.* 18,200
Stibbington-st., "The Lord Somers Arms" p.-h., also 183, Aldenham-st., f., r. 95*l.* 5s. 10,700
Euston-rd.—"The Rising Sun" p.-h., f., r. 112*l.* .. 22,109

By J. & S. MOTION (at Masons' Hall Tavern).

Leytonstone.—High-d., "The Red Lion" p.-h., u.t. 78 yrs., r. 200*l.* with goodwill 40,010

By W. ROLFE (at Masons' Hall Tavern).

Southwark Bridge-rd.—"The Fox Hotel," u.t. 72 yrs., r. 120*l.*, with goodwill 28,760

By BARKER & CATHIE (at Masons' Hall Tavern).

Haymarket.—"The Black Horse" p.-h.. u.t. 20½ yrs., r. 100*l.*, with goodwill 13,000
Chislehurst Common, Kent.—"The Crown" p.-h., u.t. 40 yrs., r. 100*l.*, with goodwill 4,000

By NOCK & JOSELAND (at Tenbury).

Lindridge, Worcs.—"Church House Farm," 156 a. 0 r. 15 p., f. and c. 3,000

By W. WEATHERHEAD (at Keighley).

Keighley, Yorks.—19, 21, 23, and 25, West-lane, f. 700
12 and 14, Bridge-st., f. 1,440
Change Gate, freehold shop and premises 1,800
Cooke-lane, a building site, area 374 yds., f. 1,029
North-st., a freehold residence, r. 50*l.* 1,750
Low-st., block of shops, workshops, houses, &c., area 1,188 yds., f. 5,500
Coney-lane, three cottages, with buildings, 480 yds., f. 1,450
Greengate, eleven freehold cottages, area 742 yds.. 1,290
Becks-rd., two plots of land, area 10,022 yds., f. 523
Oakworth-rd., two freehold cottages 350
High-st., "The Devonshire Arms Hotel," and three shops and club premises, area 1,672 yds., f. 25,900
Low-st., "The Black Horse Hotel," f. 10,250
24, Low-st., and a shop and warehouse, 575 yds., f. 5,360
Oakworth, Yorks.—Nine closes and land, 116 a. 2 r. 24 p., f. 820
Sutton, Yorks.—"New Hall Farm," 73 a. 3 r. 6 p., f. 3,200
A freehold allotment, 39 a. 3 r. 5 p. 700

By Messrs. COBB (at Rochester).

Strood, Kent.—Hillside-avenue, six building plots, f. 720
Frindsbury, Kent.—Enclosures and farm buildings, 14 a. 2 r. 38 p., f. 1,200
Freehold house, cottage, and 2 r. 12 p. 550
Enclosures of land, 17 a. 3 r. 6 p. 1,195

By PAXTON & HOLIDAY (at Hook Norton).

Hook Norton, Oxon.—Enclosures of land, 51 a. 1 r. 21 p., f. 1,236
"Six Ash Farm," 36 a. 1 r. 2 p., f. 1,374
House, shop, and three cottages, f., r. 45*l.* 740
Whichford, Warwick.—"Whichford Mill," and 16 a. 2 r. 12 p., f. 520
Epwell, Oxon.—Three enclosures, 11 a. 2 r., f.... 224

July 7.—By BAXTER, PAYNE, & LEPPER.

Farnborough, Kent.—Main-rd., two plots of land, 4 a. 1 r. 5 p., f. £520
New-rd., three plots of land, 11 a. 0 r. 29 p., f... 920

By G. E. CLARKE.

Walthamstow.—47 to 53 (odd), Cambridge-rd., f., r. 78*l.* 675
King's-cross.—14, All Saint's-st., u.t. 47½ yrs., g.r. 12*l.* 200

By Messrs. CRONK.

Knockholt, Kent.—"Melrose" and 10 a. 2 r. 17 p., f. 1,700

By DUNN & SOMAN.

Fryerning, Essex.—"Round Barn Fields," 16 a. 2 r. 36 p., f. 1,450

By PHIBBS GIBSON.

Dulwich.—37, Lancaster-rd., u.t. 82 yrs., g.r. 15*l.* 1,255
Sydenham.—Longton-av., "The Red Cottage," f., r. 75*l.*, subject to a rent charge of 15*l.* 17s. 700
New Romney, Kent.—"Crockley House," f., e.r. 54*l.* 10s. 500

By J. H. LYNCH.

Hyde Park.—5, Oxford-ter., u.t. 22¾ yrs., g.r. 10*l.*, r. 120*l.* 1,060

By A. PHILLIPS.

Hornsey.—88, Inderwick-rd., u.t. 98 yrs., g.r. 8*l.*, r. 62*l.* 405
Kensal Green.—65 and 67, Earlsmead-rd., u.t. 94½ yrs., g.r. 10*l.* 350

By RUSHWORTH & STEVENS.

Brixton.—45, 47, 49, and 51, Lorn-rd., u.t. 29 yrs., g.r. 48*l.*, r. 129*l.* 520
Marylebone.—88 and 90, Boston-pl., u.t. 23 yrs., g.r. 8*l.*, r. 54*l.* 12s. 185
Islington.—75 and 77, Cloudesley-rd., u.t. 22 yrs., g.r. 8*l.*, r. 30*l.* 170
Mile End.—9 and 11, Cephas-rd., u.t. 33 yrs., g.r. 6*l.* 6s., r. 48*l.* 445

By W. WESTON (at Paddington).

Paddington.—17, Marylands-rd., u.t. 66 yrs., g.r. 8*l.* 10s. 450
Maida Vale.—19, Carlton Vale, u.t. 51 yrs., g.r. 8*l.* 620
Kilburn.—40, Albert-rd., u.t. 62 yrs., g.r. 6*l.*, r. 40*l.* 290
Notting Hill.—68, Bevington-rd., u.t. 69 yrs., g.r. 6*l.* 260
Paddington.—32, Beethoven-st., u.t. 79 yrs., g.r. 7*l.*, r. 36*l.* 250

By Messrs. SPELMAN (at Great Yarmouth).

Gorleston, Suffolk.—Part of "The Church Close," 22 a. 2 r. 22 p., f. 730
"The Scooty" and "Harpen" Pieces, 23 a. 2 r. 31 p., f. 660
Beccles-rd., &c., three plots of land, 14 a. 3 r. 16 p., f. 590
66, Fen-st., f., r. 12*l.* 235

By W. T. BALLS (at Lowestoft).

Lowestoft, Suffolk.—"The Sparrow's Nest" and 9 a. 3 r. 17 p., f. 7,900
Whploade-rd., sixteen freehold cottages 1,410

By G. DURRANT & SONS (at Harleston.)

Harleston, Norfolk.—Exchange-st., two shops and houses, f. 300

By N. EASTON & SON (at Hull).

Bainton, Yorks.—"Bainton Balk" Farm, 344 a., f. 10,900
Paull, &c., Yorks.—"Hill Top Farm," 89 a., f. ... 2,000

JULY 8.—By DREW & SON.

Stockwell.—10, Gateley-rd., u.t. 74½ yrs., g.r. 9*l.* 5s., r. 45*l.* 370
39 and 41, Stanley-st., u.t. 78 yrs., g.r. 13*l.*, r. 60*l.* 515

By GREEN & SON (Hammersmith).

Chiswick.—22, 24, and 26, Holly-rd., u.t. 83 yrs., g.r. 16*l.* 10s. 660

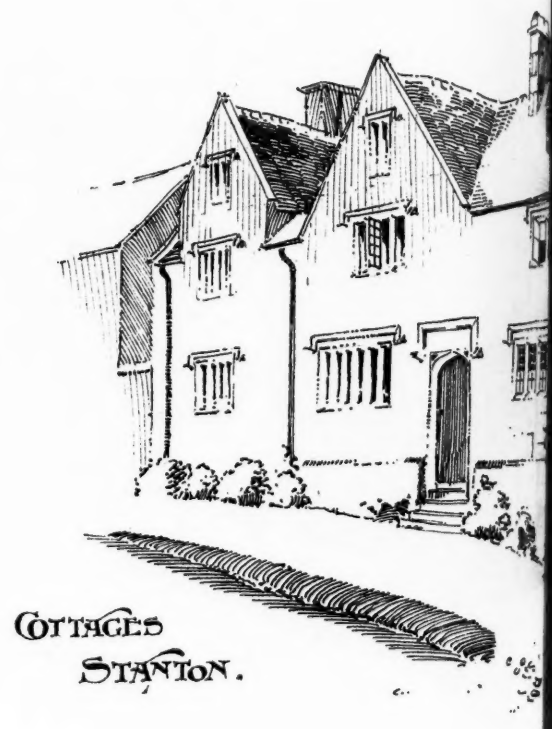
Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; e.r. for estimated rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; yd. for yard, &c.

PRICES CURRENT OF MATERIALS.

TIMBER.		
Greenheart, B.G.	ton	8/0/0 0/0/0
Teak, E.I....	load	10/10/0 15/0/0
Sequoia, U.S.ft.cu.		1/8 1/10
Ash, Canada load		3/5/0 4/10/0
Birch, do.		2/15/0 3/10/0
Elm, do.....		4/0/0 5/5/0
Fir, Dantsic, &c..		2/15/0 4/15/0
Oak, do.....		2/10/0 3/10/0
Canada		5/5/0 6/5/0
Pine, Canada red		0/0/0 0/0/0
Do. Yellow		2/0/0 4/0/0
Lath, Dantsic, fath		4/10/0 5/10/0
St. Petersburg..		5/0/0 8/10/0
Wainscot, Riga, &c., log		1/10/0 3/15/0
Odessa, crown....		1/10/0 3/15/0
Deals, Finland 2nd & 1st std 100		8/0/0 8/10/0
Do. 4th & 3rd...		8/0/0 8/10/0
Do. Riga		7/10/0 8/10/0
St. Petersburg, 1st yellow....		10/0/0 12/10/0
Do. 2nd yellow		9/0/0 10/0/0
Do. white		8/10/0 10/10/0
Swedish		9/10/0 16/10/0
White Sea.....		10/10/0 17/0/0
Canada, Pine 1st		19/10/0 25/10/0
Do. do. 2nd		14/0/0 16/10/0
Do. do. 3rd, &c.		6/10/0 10/0/0
Do. Spruce, 1st.		10/10/0 12/0/0
Do. do. 3rd and 2nd		8/0/0 9/5/0
New Brunswick		7/15/0 8/5/0
Battens, all kinds		5/0/0 20/0/0
Flooring boards, sq., 1 in. prep. 1st		0,8/6 0/15/6
Do. 2nd		0/7/0 0/12/0
Other qualities—		0/5/3 0/6/9
Cedar, Cuba, ft.		4½ /5
Honduras, &c.		/4 /5
Mahogany, Cuba		/5 /6½
St. Domingo, cargo av.		/4½ /7
Mexican, do. do.		/4 /5
Tobasco, do. do.		/4½ /7
Honduras, do.		/5 /6½
Box, Turkey, ton		4/0/0 25/0/0
Rose, Rio.....		7/0/0 24/0/0
Bahia		8/0/0 22/0/0
Satin, St. Deming.		0/0/7 0/2/0

TIMBER (*continued*).		
Satin, Porto Rico	0/0/7	0/2/6
Walnut, Italian ..	0/0/3	0/0/7
METALS.		
Iron—Pig, in Scotland .....ton	3/3/11	0/0/0
Bar, Welsh, in London.....	5/15/0	5/17/6
Do. do. at works in Wales	5/10/0	5/12/6
Do. Staffordshire, in London.....	6/5/0	7/10/0
COPPER—British cake and ingot	51/10/0	52/0/0
Best selected ..	51/15 0	52/5/0
Sheets, strong..	57/0/0	58/0/0
Chili bars	47/16/3	0/0/0
YELLOW MTL lb.	4½d.	5d.
LEAD—Pig, Spanish ...ton	12/3/9	12 6/3
English com. brands	12.6/3	12.8 9
Sheet, English 6 lbs. per sq. ft. and upwards ..	13/11/3	0/0/0
Pipe.....	14/1/3	0/0/0
ZINC—English sheet.....ton..	20/10/0	0/0/0
Vieille Mon. tagne	21/10/0	0/0/0
Spelter	16/18/9	17/1/3
TIN—Straits	62/11/3	0/0/0
Australian.....	63/10/0	0/0/0
English Ingots..	65/15/0	66/10/0
Banca.....	61/0/0	0/0/0
Billiton	59/15/0	60/0/0
OILS.		
Linseed .....ton	14/5/0	0/0/0
Cocoanut, Cochin	27/15/0	0/0/0
Do. Ceylon	24/0/0	0/0/0
Palm, Lagos.....	24/10/0	0/0/0
Rapeseed, English pale	27/10/0	27/15/0
Do. Brown	27/0/0	27/10/0
Cottonseed ref. ..	15/17/6	16/10/0
Oleine.....	18/10/0	19/10/0
Lubricating U.S.	0/0/3	0/7/6
Do. black	0/0/5	0/8/6
TAR—Stockholm barrel	22/0	0/0/0
Archangel.....	0/12/6	0/0/0
Turpentine.....	19/17/6	0/0/0

THE OLD VICARAGE
EVESHAM.
Looking towards
Churchyard.
Fred Taylor.
Sep. 1. 96.


COTTAGES
STANTON.

THE
OLD VICARAGE
EVESHAM.
Fred. Taylor.
Aug. 96.

SALFORD HALL
NR. EVESHAM

A PIECE OF BIDEFORD.

COTTAGE WESTON SUBEDGE.

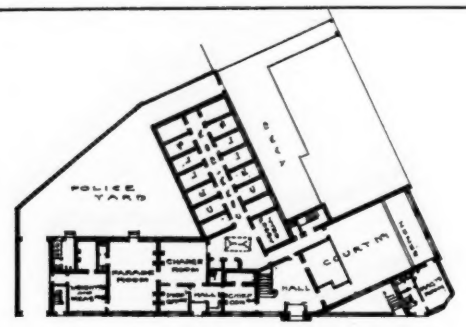
COTTAGE CLIFFORD CHAMBERS

PHOTO-LITHO. SPRAGUE & Cº 4 & 5, EAST HARDING STREET, FETTER LANE, E.C.

HIRE AND WARWICKSHIRE.—BY MR. FREDERICK TAYLOR.

Police Offices Courts Etc. Rotherham.

Richard J. Lovell architect



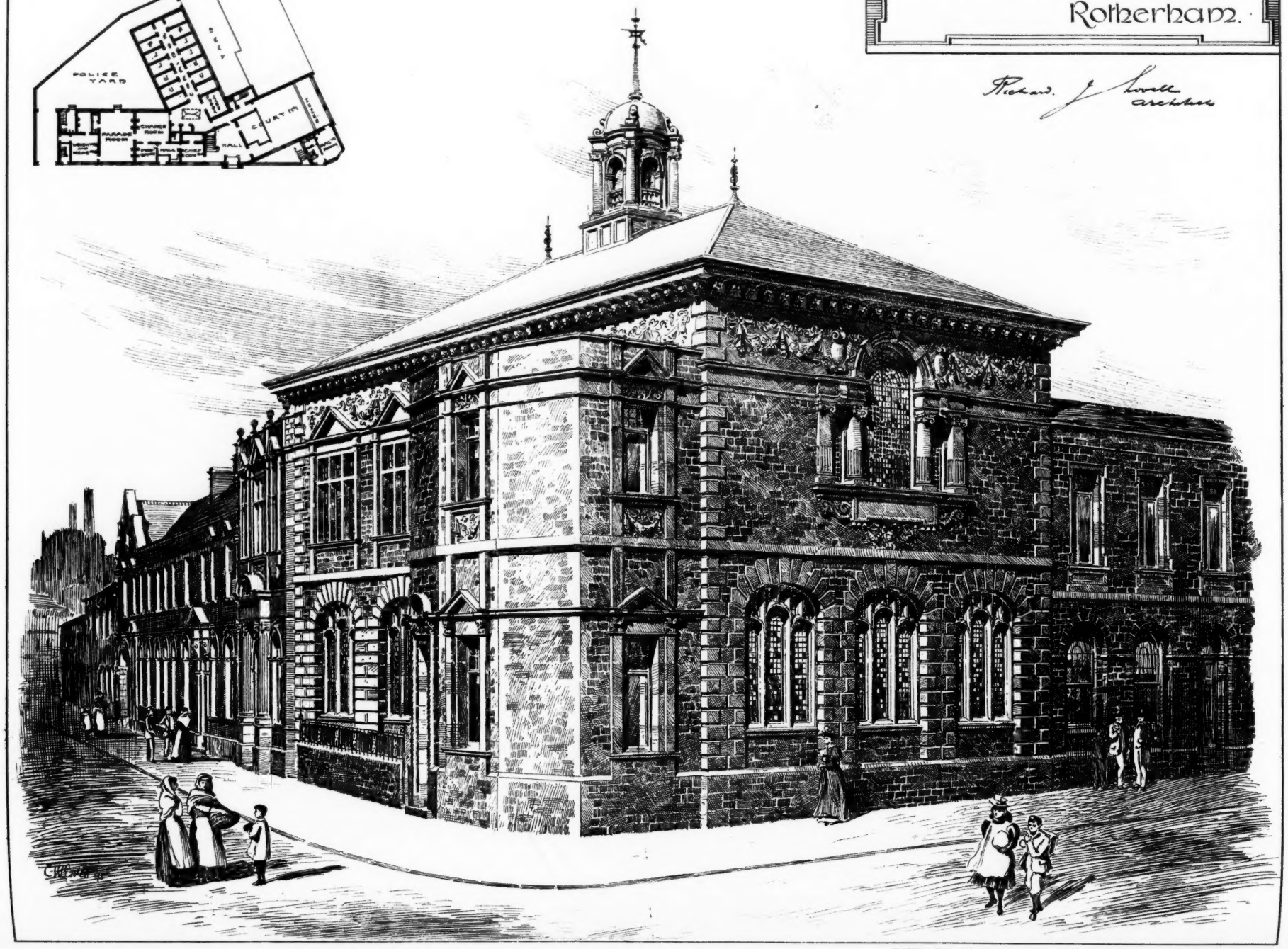


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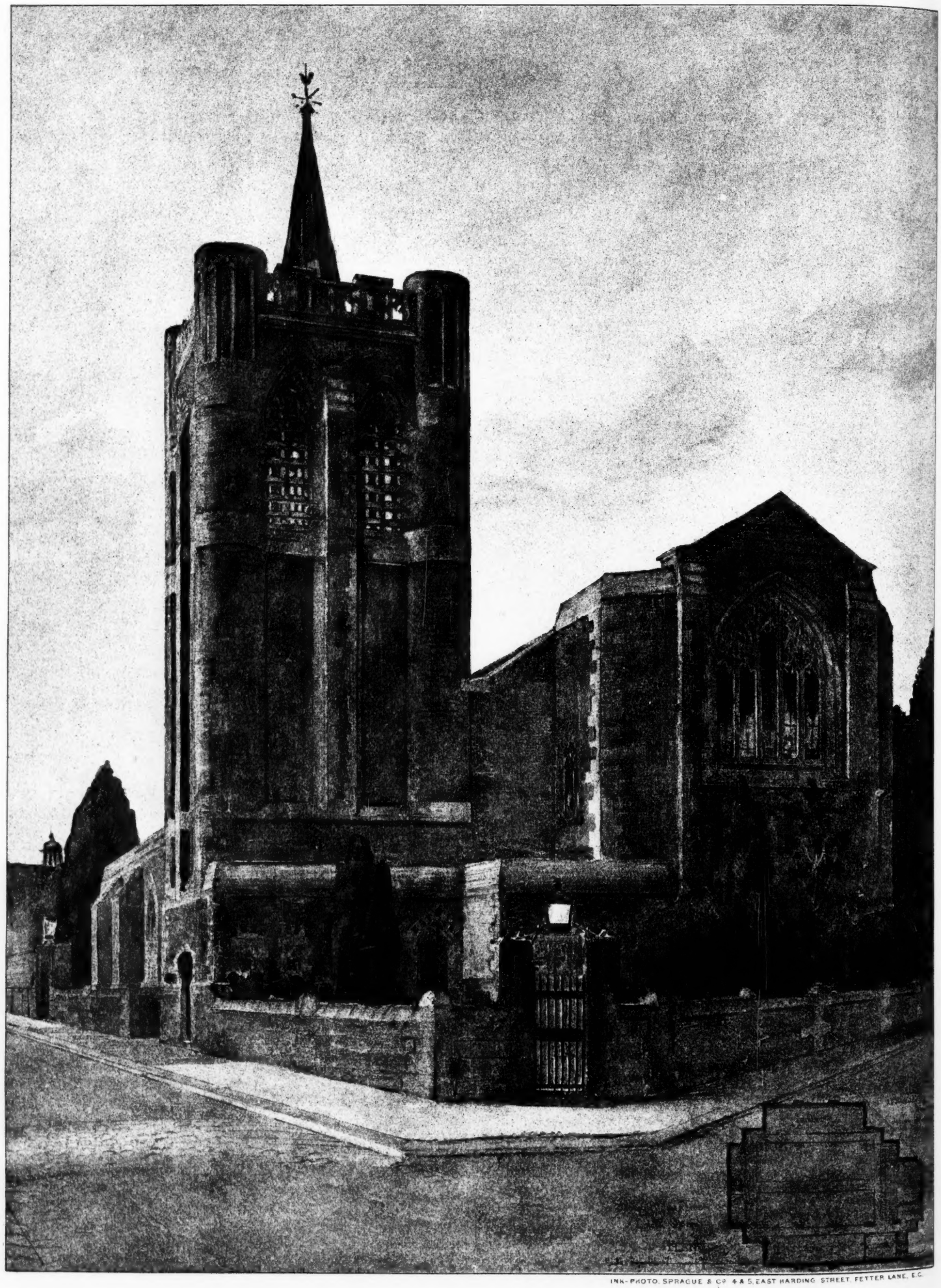
PHOTO-LITHO SPRAGUE & Cº 4 & 5 EAST HARDING STREET FETTER LANE. E.C.



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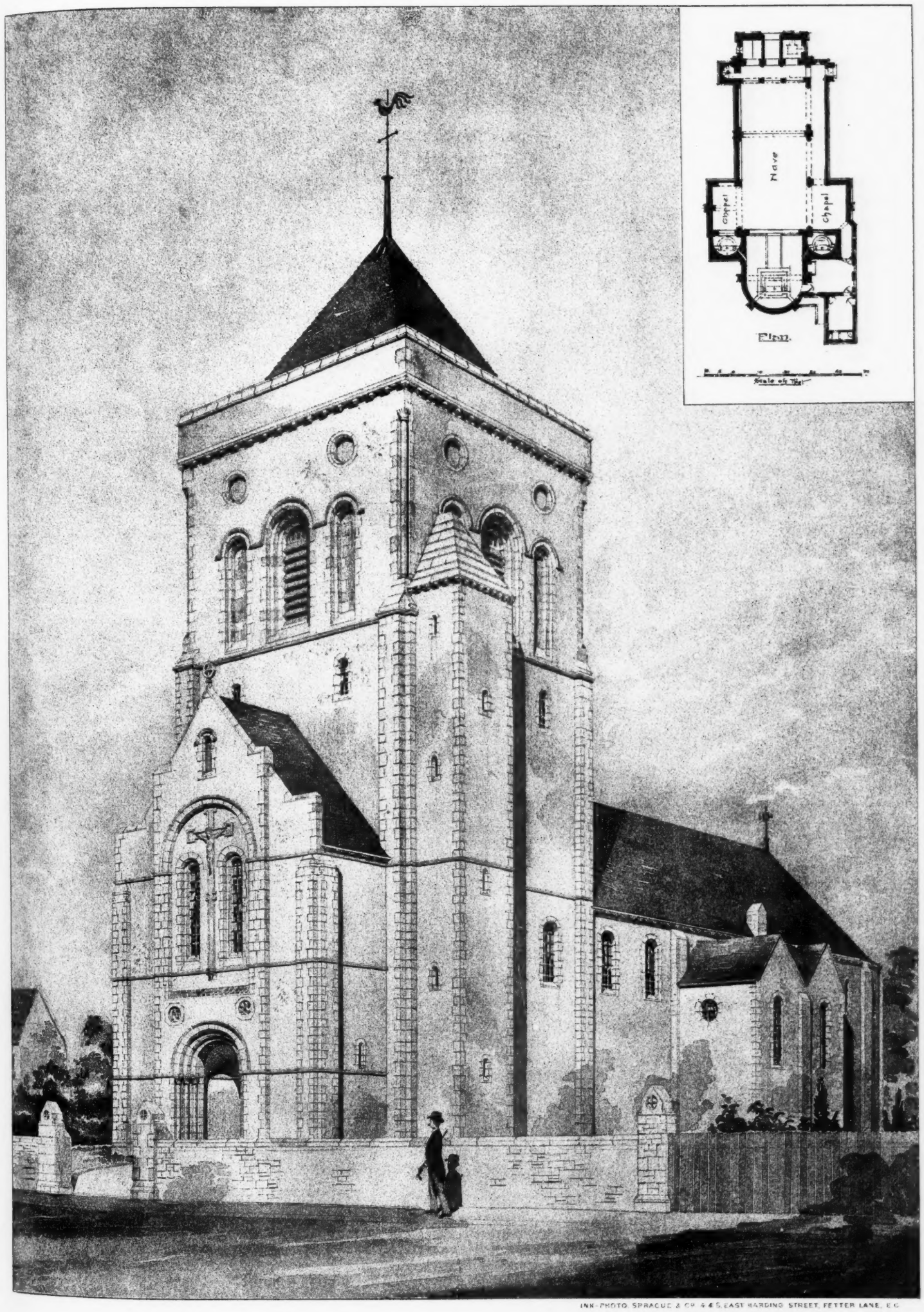
DESIGN FOR A CHURCH IN EXETER.—By Mr. H. C. Corlette, A.R.I.B.A.



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ST. PETER'S, EAST GRINSTEAD.—Mr. F. A. Walters, F.S.A., Architect.

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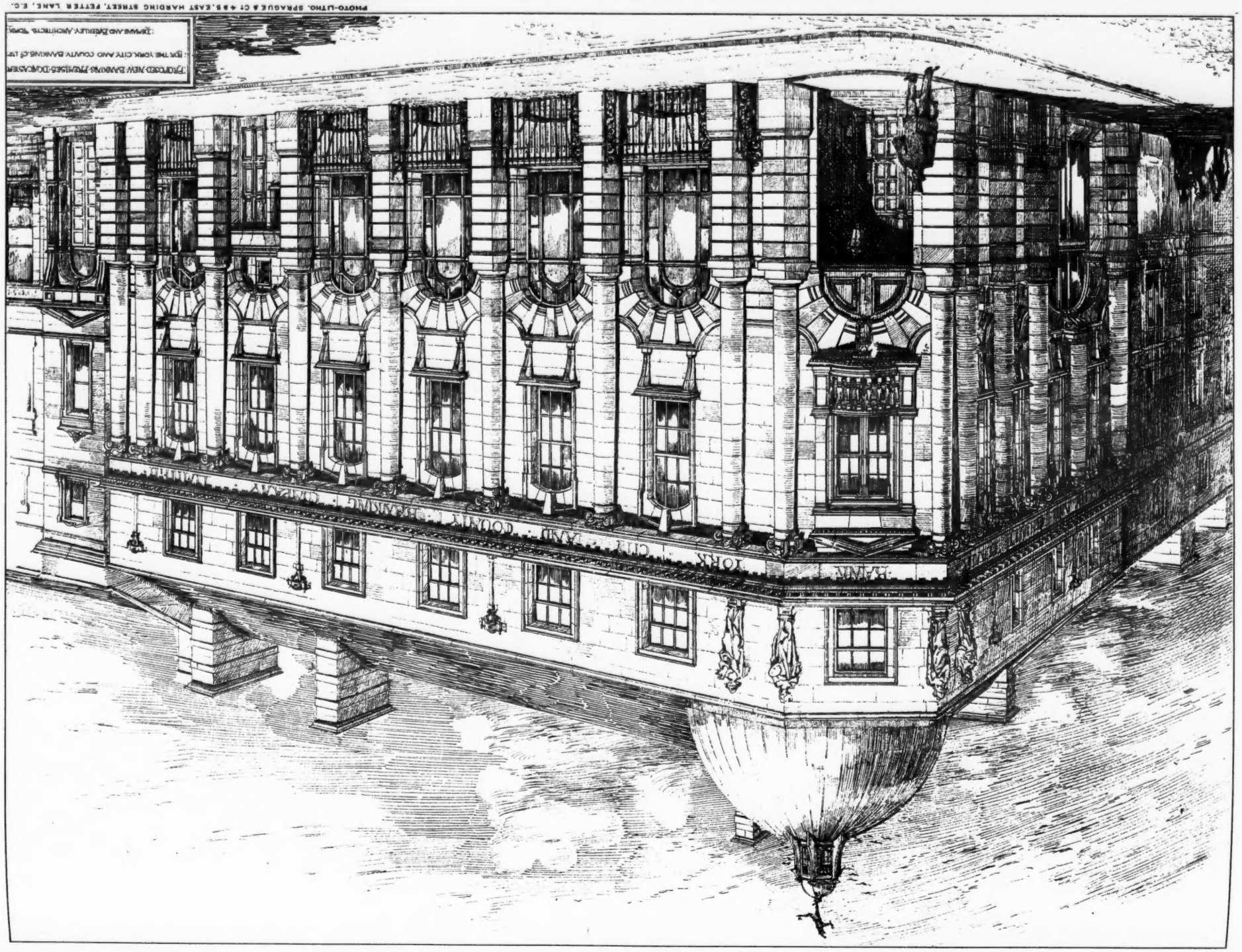
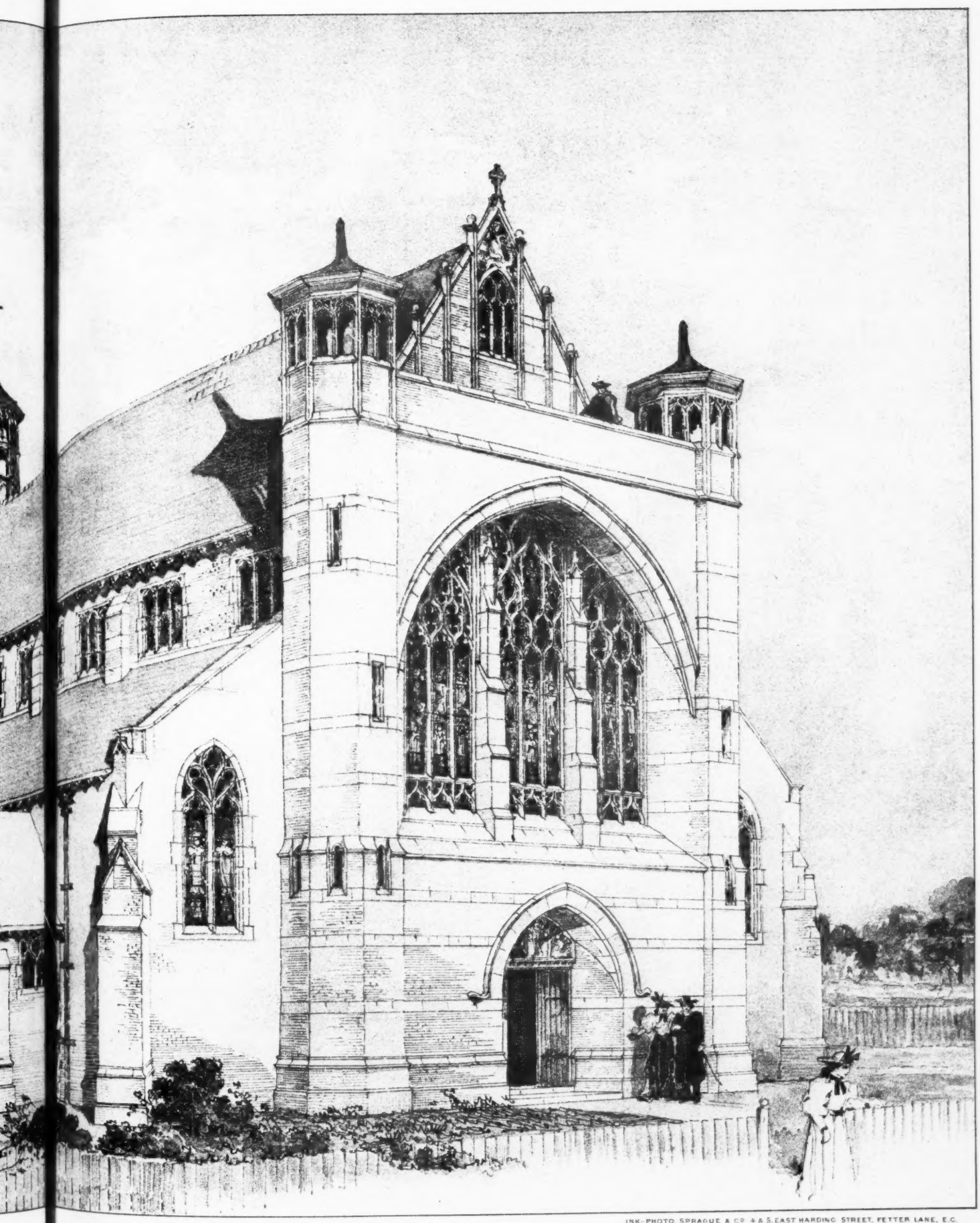
PROPOSED NEW BANKING PREMISES FOR THE YORK CITY AND COUNTY BANKING Co LTD

JAMES AND BRIGHTLEY, Architects, York.



N.W. View of the Church of St. Michael Southfields. Wandsworth



INK-PHOTO. SPRAGUE & Co. 4 & 5, EAST HARDING STREET, FETTER LANE, E.C.

COMPETITION, CONTRACTS, AND PUBLIC APPOINTMENTS.

COMPETITION.

Nature of Work.	By whom Advertised.	Premiums.	Designs to be delivered.
*Sewerage Scheme	Mossley U.D.C.	100l.	Oct. 1

CONTRACTS.

Nature of Work or Materials.	By whom Required.	Forms of Tender, &c. Supplied by	Tenders to be delivered.
*Making-up, Paving, Asphalting, &c.	Lambeth Vestry	Surv. Vestry Hall, Kennington-road, S.E.	July 27
Enlarging the Salutation Hotel, Farningdon	Morland & Co.	G. Winship, Archt. Altingdon	do.
Additions to Gasworks, Dawsholme	Glasgow Corporation	W. Foulis, Engr. 45, Johnstreet	do.
Bridge Work, Foy, near Ross	Herefordshire C.C.	H. T. Wakelain, C.E. Hereford	do.
Hotel, Swan street, Loughborough	Offlier's Brewery, Ltd.	W. T. Hampton, Archt. Swan-street	do.
School, Belgrave-road, Dover	.....	Rev. J. Dorricott, 2, Gladstone-terrace, Dover	do.
Water Supply, Imperial Distillery Carron, N.B.	.....	C. C. Doir, Archt. Elgin	do.
*Drains, &c.	County Borough of West Ham	Lewis Angell, Town Hall, Stratford, E.	do.
*Kerbing, Tarpaving, &c. Willifield-road, Catford	Lewisham Bd. of Wks.	Surv. Board of Works' Office, Catford, S.E.	do.
do. do. Vinsleigh-road, Penge	do.	do.	do.
do. do. Marnock-road, Brockley	do.	do.	do.
do. do. Methuen-road, Catford	do.	do.	do.
*Brick and Concrete Sewer	do.	do.	do.
*Granite Spalls and Broken Granite	Hackney Vestry	J. Lovegrove, Vestry Hall	July 29
Painting and Decorating	do.	Gordon, Lowther, & Gunton, Finsbury House, Bloomfield-st. E.C.	do.
*Jarrah Wood Paving	Dewsbury Corp.	H. Dearden, Town Hall	do.
Stables (for 80 horses), Fenton-road, King's Cross, Halifax	John Marsh & Co. Ltd.	R. Horsfall & Son, Archt. 13, George-street, Halifax	do.
Additions to Victoria School, Ebbw Vale	Redwellty School Bd.	James & Morgan, Archt. Cardiff	do.
Additions to Workhouse	North Dublin Union	Mr. Morris, 24, Cabra-parade, Dublin	do.
Police Station and Hall, Bronlestairs	Standing Joint Com.	F. W. Ruck, Surv. 86 Week-street, Maidstone	do.
Road Works, Green-lane, Knowle	Mirfield (Yorks) U.D.C	F. H. Hare, Surv. Town Hall, Mirfield	do.
Kerbing and Channelling Footpaths, Market-place	Burgh (Lincs) Parish Council	F. J. Dixon, C.E. Spilsby	do.
*Walls, Fences, and Gates	Met. Asylums Board	A. & C. Marston, 15, Leadenhall-street, E.C.	do.
*Asphalting Star-road	Fulham Vestry	C. Botterill, Town Hall	do.
*Lamp Post, Gully, Grates, Manhole Covers, &c. &c.	Mile End Vestry	J. M. Knight, Vestry Hall, Bancroft-road, Mile End	do.
Church, Garreg-ddu, Elan Valley, near Rhayader	Birmingham Corp.	S. W. Williams, Archt. Rhayader	July 29
Sludge Press House	Droylsden (Lancs) U.D.C.	W. Curry, Council Offices, Droylsden	do.
Paving, Haughton-road	Handsworth U.D.C.	E. Kenworthy, Surv. Council House	do.
Six Houses, Harton Colliery, South Shields	Harton Coal Co. Ltd.	Secretary, Colliery Offices	do.
Additions to Grammar School, Carlisle	.....	G. D. Oliver, Archt. 5, Lowther-street	do.
*Alterations, School of Art	Brighton Corporation	F. J. C. May, Town Hall, Brighton	July 30
Twenty-eight Houses, Malkroyd-lane	Dewsbury Pioneers' Indus. Soc. Ltd.	Holtom & Fox, Archt. Westgate, Dewsbury	do.

CONTRACTS—*Continued.*

Nature of Work or Materials.	By whom Required.	Forms of Tender, &c. Supplied by	Tenders to be delivered.
School, Bethel-road, Carnarvon	.....	R. L. Jones, Archt. 14, Market-st. Carnarvon	July 30
*Pipe Sewers, &c.	Bexley U.D.C.	A. Williams & Son, 39, Gt. George-st. S.W.	do.
House, Buckie, N.B.	.....	D. & J. R. M'Millan, Archts 211, Union-st. Aberdeen	Aug. 2
Public Hall, near Carlisle	.....	G. D. Oliver, Archt. 5, Lowther-street, Carlisle	do.
*Removal of Clinker and Fine Dust	Shoreditch Vestry	C. Newton Russell, Coronet-st. Shoreditch	Aug. 3
Sewerage Works, Ben Rhydding, Yorks	Ilkley U.D.C.	J. Waugh, C.E. Funbridge-chambers, Bradford	do.
*Granite	Brentford U.D.C.	Newell Parr, Clifden House, Boston-road, Brentford	do.
*Six Dwelling-houses	Admiralty	Watch Room, Beachy Head	do.
Additions to School, Glanamman, Wales	Llandilo Fawr U.D. Sch. Fd.	H. Hertert, Archt. Brynmarlais, Ammanford R.S.O.	Aug. 4
*Yorkshire Stone	Greenwich Bd. of W.	141, Greenwich-road, S.E.	do
Laundry, Bodenham-road, Hereford	Sanitary Laundry Co. Ltd.	A. Lovecey, 2, Offa-street, Hereford	Aug. 6
Fourteen Cottages, Stone-road, Southtown, Great Yarmouth	A. F. Clowes	C. C. Baker, Archt. Great Yarmouth	do.
*Water Culvert	Hornsey U.D.C.	E. J. Lovegrove, Offices, Southwood-lane, Highgate	Aug. 9
*Broken Granite	Hanwell U.D.C.	Offices	do.
Pavilion at Recreation Ground	Ecclesall Corp.	G. W. Bailey, Town Hall	do.
*Infirmary	Islington Guardians	The Clerk, St. John's-rd. Upper Holloway, N.	Aug. 10
*Enlargement of Station, &c. Plymouth	G. W. R. Co.	The Engineer, Plymouth Station	do.
*Eight Dwelling-houses	Admiralty Commrs.	21, Craven-street, W.C.	Aug. 13
*Pipe Sewer, &c.	Shoreditch Vestry	J. Rush Deacon, Surv. Town Hall	Sept. 7
*Rebuilding Public House	Benskin's Watford Brewery	Dear & Winder, 119, Great Russell-street, W.C.	No date
Additions to Cumberland Infirmary, Carlisle	Building Com.	J. G. Hewitt, Infirmary, Carlisle	do.
*Schools	Tottenham Sch. Bd.	A. N. Butler, 16, Finsbury-circus, E.C.	do.
House and Stables, Griffithstown, near Newport, Mon.	Dr. O'Keefe	Land. vne & Griggs, Archt Newport, Mon.	do.
Extension, Victoria Mills, Draycott	E. T. Hooley	G. S. Doughty, Archt. Britannia-chbrs. Nottingham	do.
Additions to Victoria Hotel, Harrogate	Bently & Co.	A. E. Kirk, Archt. 13, Bond-street, Leeds	do.
Road Metal	Barnard Castle U.D.C.	J. I. Dawson, C'ncil Offices	do.
Hotel and Stables, Holton-road, Cadoxton-Barry, Glam.	.....	H Tudor Thornley, Archt. 100, St. Mary-st. Cardiff	do.
Grammar School, Ilkley-in-Wharfedale	.....	C. H. Hargreaves, Archt. Exchange-bldgs. Bradford	do.
House, Westend, Bedlington	.....	N. Stoker, Shop-row, Bedlington Colliery	do.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Applications to be in.
*Surveyor's Assistant	Handsworth U.D.C.	120l. rising to 150l. per ann.	July 29
*Road Foreman	Hornsey U.D.C.	2l. per wk. cottage, coal, & gas	July 31

Those marked with an asterisk (*) are advertised in this Number. *Competitions, p. iv.* *Contracts, pp. iv. vi. viii. & xxi.* *Public Appointments, pp. xviii. & xxi.*

TENDERS.

[Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 10 *a.m. on Thursdays.* N.B.—We cannot publish Tenders unless authenticated by the name and address of the sender: and we cannot publish announcements of Tenders accepted unless the amount of the Tender is given, nor any list in which the lowest Tender is under £100, unless in some exceptional cases and for special reasons.]

ANNFIELD PLAIN (Durham).—For the execution of road improvement works, for the Urban District Council. Mr. T. J. Trowsdale, Surveyor, Annfield Plain:—

Joseph Goldsborough	£368 1 6	Gatess & Goldsborough, West Kyo*	£259 0 4
Thos. A. Turnbull	364 19 0		
Joseph Dunn	289 11 0		

* Accepted.

BECKENHAM.—For laying surface-water relief sewer, Beckenham and Chaffinch roads, for the Urban District Council. Mr. John A. Angell, Surveyor:—

D. Brewer	£536 10 6	E. Iles	£456 6 3
W. Langridge	525 9 8	Mowlem & Co.	398 0 0
T. Adam	488 1 3	W. Wadey	391 6 3
Killingback & Co.	441 1 5	J. Jackson, Plaistow, E.*	347 10 9
Thomas & Edge	413 0 0		

* Recommended for acceptance.

BRACKNELL.—For the erection of a cottage, &c, for the Berkshire County Council. Mr. Joseph Morris, County Surveyor, 156, Friar-street, Reading:—

C. W. Cox & Son	£1,353 0 0	E. C. Hughes	£1,118 16 10
W. Watson	1,281 0 0	G. Wenham	1,118 5 10
C. Woodbridge	1,198 10 0	East & Hyde	1,087 0 0
G. H. Tucker	1,194 0 0	J. B. Seward	1,026 0 0
P. Newberry	1,173 0 0	Wm. J. May, Bracknell (accepted)	997 10 0
H. Clark	1,149 0 0		

BRADFORD (Yorks).—Accepted for the extension of engineering works, Thornbury. Mr. Thos. Barker, C.E., 5, Bond-street, Bradford:—

Masonry.—Joseph Coates	£421 0
Joinery.—J. Copley	365 0
Ironfounding.—E. & H. W. Kaley	193 0
Slating.—Thomas Nelson	89 10
Plumbing and Glazing.—R. Townend	55 0
Plastering.—J. Wheaton	47 15
Painting.—G. J. Walton	16 7

[All of Bradford.]

CARDIFF.—For the construction of an underground convenience in the Hayes, for the Corporation. Mr. W. Harpur, C.E., Town Hall, Cardiff. Quantities by Engineer:—

Thomas Rees	£2,839 8 0	James Allan, Cardiff*	2,458 0 9
Chas. H. Parsons	2,499 2 0		

* Accepted

CHESHAM.—For levelling, paving, &c., Higham-road and three other roads, for the Urban District Council. Mr. A. H. Forbes, Surveyor, Blucher-street, Chesham:—

H. Williams†	£1,050 0 0	Taylor & Parsons†	£889 0 0
T. Bristow Bros‡	1,038 9 2	J. Smith‡	515 0 9
Abel Mead, Chesham*	1,005 0 0		

* Accepted.

[Surveyor's estimate for four roads, £957. 13s. 6d.]

† Total for four roads.

‡ Total for one road.

CHINGFORD (Essex).—For the supply of 500 tons broken granite, for the Urban District Council:—

	Per ton. s. d.	
A. & F. Manuelle	12 11	For Guernsey Granite.
Wm. Griffiths	13 3	
Fry Brothers	13 10	
J. Mowlem & Co.	13 7	
C. M. Manuelle, 12, Lime-street, E.C. (accepted)	11 8	For Quenast Granite.

DUBLIN.—For erecting a new factory, Wood-street, Dublin. Plans prepared by Mr. Richard W. Walsh, C.E., 10, South Frederick-street. Quantities by Messrs. Slevin & Clayton:—

James Beckett	£6,750	Roberts	£6,570
William Beckett	6,720	John Good	6,500
Pemberton & Son	6,656	J. & H. Martin	6,407

EAST MOLESEY.—For making up Beauchamp and Nightingale roads, for the Urban District Council. Mr. J. Stevenson, Surveyor, Council Offices, East Molesey. Quantities not supplied:—

W. Adamson	£936 0 0	S. Atkins, Kingston-on-Thames*	£884 13 6
Free & Sons	921 0 0		

* Accepted.

HAVERFORDWEST.—For additions, &c., to infirmary, for the Trustees of the Pembrokeshire and Haverfordwest Infirmary. Mr. D. Edward Thomas, architect, Victoria-place, Haverfordwest:—

Wm. Thomas	£1,343	Joseph Lewis, Candett, Haverfordwest*	£1 035
T. Davies & Son	1,268		

* Accepted.

HAMPTON-ON-THAMES.—For the erection of a fire-station, Thames-street, for the Urban District Council, Hampton. Mr. John Kemp, C.E., Council's Offices, Hampton-on-Thames:—

H. March	£4 8 11	J. Wright, Hampton	£435 15

* Accepted.

HOVE.—Accepted by the Hove Council for street and sewer works. Mr. H. H. Scott, Town Surveyor:—

Street Works in Rutland-road.

Messrs. J. Parsons & Sons, Hove £344

Street Works in Coleridge-street.

Messrs. J. Parsons & Sons, Hove £233

New Sewer and Road Works, Sackville-road.

Messrs. J. Parsons & Sons, Hove £1,191

KEIGHLEY.—For additions to Paste Works, for Messrs. Hall & Stells. Mr. John Haggas, architect, North-street, Keighley:—

Masonry.—T. Moore, Keighley	£1,416
Joinery.—I. Hartley, Keighley	
Slating.—Thornton & Binns, Keighley	
Plastering.—Eli Sharp, Keighley	
Plumbing.—W. Sugden, Keighley	
Ironwork.—John Barrett, Crosshills, near Keighley	

KINGSTON.—For extension at Kingston Brewery. Messrs. Yetts, Steady, & Usher, architects. Quantities by Messrs. K. L. Curtis & Sons:—

Faulkner	£6,677	Whantley & Sons, East Molesey	£6,630
Oldridge & Son	6,607		
B. E. Nightingale	6,646		

LANCASTER.—For erecting four shops, &c., for Messrs. J. & C. Feil. Mr. J. Parkinson, architect, 67, Church-street, Lancaster. Quantities by architect:—

Masonry.—Wm. Harrison	£1,882 15 7
Joinery.—Ed. Thompson	
Slating and Plastering.—T. Cross & Son	
Plumbing and Glazing.—Harrison & Moser	

[All of Lancaster.]

LANCHESTER.—For the execution of bridge work, for the Rural District Council. Mr. Wm. Cumming, Surveyor, Lanchester: J. Atkinson ..... £150 5 0 | D. Champney, Lanchester* £126 17 10

* Accepted.

LEE.—For rebuilding the "Rose of Lee" public-house, Lee Kent. Mr. W. J. Ingram, architect:—

Prestage	£9,248	F. & H. Higgs	£8,677
Courtney & Fairburn	9,227	Rowe	8,600
Whitehead	9,199	Lascelles & Co.	8,598
Spencer & Co.	8,793	Lily & Lily	7,997
W. Shurmur	8,719	Beer & Gash	7,871

LEICESTER.—For the erection of house, cottage, stabling, &c., for the Corporation. Mr. T. W. Pettifor, architect, Berridge-street Chambers, Leicester. Quantities by architect:—

J. E. Johnson & Son	£10,720	Bradshaw & Sons	£8 923 5
M. Martin	9,818	W. M. Sharp	8,657 14
G. Holt	9,463	Riddett & Son, Prospect-road, Leicester*	8,475
Tyers & Yates	9,261	E. Fox†	7,999
E. Orton	8,998		

* Accepted. † Withdrawn.

LEYTON.—For rebuilding the "Prince of Wales" public-house, High-street. Messrs. Gordon, Lowther, & Gunton, architects:—

Antill & Son	£3,850	Lascelles & Son	£3,449
Allen & Son	3,830	W. Shurmur	3,440
Snewin Bros.	3,677	Edwards & Medway	3,347
Jarvis & Sons	3,596	C. Cox	3,178

LITHERLAND (Lancs.).—For widening, &c., Linacre-road, for the Urban District Council. Mr. W. B. Garton, surveyor, Sefton-road, Litherland. Quantities by surveyor:—

W. F. Chadwick	£496 7 2	J. Keating & Sons, Commercial-road, Liverpool*	£414 6 0
Peter Balmer	449 0 0		
Thos. Horrocks	439 5 6		

[Surveyor's estimate, £468.]

* Accepted.

LITHERLAND (Lancs).—For the completion of Violet-road, for the Urban District Council. Mr. W. B. Garton, surveyor, Sefton-road, Litherland. Quantities by surveyor:—

Peter Balmer	£1,037 0 0	J. Keating & Sons	£913 5 5
W. F. Chadwick	993 12 9	Stephen Ashcroft, Bootle*	898 10 9
T. Horrocks	941 10 5		

[Surveyor's estimate, £1,017 11s. 2d., if Haslingden flags used.]

LLANDILO (Wales).—For the erection of schools, for the Llandilo Fawr School Board. Mr. Hy. Herbert, architect, Brynmarlais, Ammanford, R.S.O.:—

B. Howell & Son, Ltd.	£2,257 18 0	Thomas & Evans	£1,945 0 0
Ben Davies	2,106 17 3	Ben Jenkins	1,995 0 0
L. Davies	2,103 3 8	D. Evans, Llandilo*	1,731 0 0
Thomas & Stephens	1,970 0 0		

* Accepted.

LONDON.—For the further extension of the Argus Printing Co., Ltd., premises, Temple-crescent, for the Argus Printing Co., Ltd. Mr. Chas. Vas. Hunton, architect, Wardrobe-chambers, Queen Victoria-street. Quantities by Mr. Chas. Nobson, Lewisham. Constructional ironwork and fireproof floors by Messrs. Mark Fawcett, & Co., Queen's Anne-gate :—

Locke & Son	£10,100	Shurmur	£10 [illegible]
Greenwood	10,651	Higgs & Higgs	10,053
Lascelles & Co.	10,326	Patman & Fotheringham	10 [illegible]
Perrin & Lickfold	10,090	Lawrence & Sons	10,778
H. Williams	10,015	Holloway & Greenwood	10,580
Holloway	10,387	Jerrard & Sons*	10 547
Downs	10,098	* Accepted.	

LONDON.—For the erection of warehouse at Shacklewell-lane, Stoke Newington, for Messrs. Lloyd, Attree, & Smith. Mr. J. R. Vining, architect :—

Thrussell & Son	£9,467	McCormick & Co.	£7,777
F. & H. Higgs	8,951	W. Downs	7,714
Foster & Lucasse	8,488	W. Shurmur	7,657
Holliday & Greenwood	8 [illegible]	Rowyer	7,538
Johnson & Co.	8,630	E. Lawrence & Son	7,474
Turtle & Appleton	8,575	Gower & Son	7,426
Jarvis & Son	7,973	W. Wall	7,075
Patman & Fotheringham	7,840		

LONDON. — For alterations at No. 28, Bishopsgate-street Within, E.C. Mr. F. Hammond, architect :—

Ashby Bros.	£715	Shurmur	£707
Dixon	710	Larke	674

LONDON.—For paving portions of High-street, for the Shoreditch Vestry. Mr. J. Ruth Dixon, C.E., Town Hall, Old-street, E.C. :—

	Per sup. yd. s. d.
John Mowlem & Co.	15 2
Geo. J. Anderson	13 11
Improved Wood Pavement Co.	13 9
William Griffiths, Kingsland-road, N.E. (accepted)	13 9

LONDON.—For factory at Dalston-lane, N.E. Mr. A. B. Hughes, architect :—

H. L. Holloway	£12,120	W. Downs	£10,983
Adamson	11,449	W. Dabbs	10,524
E. Lawrence & Son	11,250	Chessum & Son	9,936
Faulkner	11,137	W. Shurmur	9,689
Williams	10,986		

LONDON.—For additions to warehouse at Wick-lane, Old Ford, for Messrs. Allen, Cockshut, & Co. Mr. F. M. Elgood, architect :—

Holland & Hannen	£7,777	W. Shurmur	£7,147
Holloway Bros.	7,040	Perry & Co.	6,842
Harris & Wardrop	7,197		

LONDON.—For rebuilding the "Sir Robert Peel" public-house, Walworth-road. Mr. W. J. Ingram, architect :—

Lang & Son	£2,529	Long	£2,314
F. & H. Higgs	2,490	Lily & Lily	2 259
Beer & Gash	2,359	Courtney & Fairburn	2,199
Whitehead	2,342	W. Shurmur	2,105
Rowe	2,300	Maxwell	2,146

LONDON.—For warehouse at Brunswick-street, Hackney-road. Mr. J. Hamilton, architect :—

Sewell Bros.	£538	Jarvis & Son	£533
W. Shurmur	363	J. Beale	349
Barrett & Power	335		

LONDON.—For the erection of four shops at Chrisp-street Poplar. Messrs. J. & S. F. Clarkson, architects :—

Turnbull & Son	£4,814	McCormick	£3,573
Harris & Wardrop	4,565	W. Shurmur	3,492
Atherton & Dolman	4,531	J. E. Toda	3,400

LONDON.—For stables, &c., at Gainsborough-road, Hackney Wick, for the Acme Wood Block Company. Messrs. Barnes, Williams, & Co., architects :—

White & Co.	£649	Britton	£606
Outhwaite	634	W. Shurmur	585
Kiddle & Son	610	Jarvis & Son	566

LONDON.—For alterations to the "Prince Arthur" public-house, Poplar. Mr. F. A. Ashton, architect :—

A. E. Symes	£2,175	S. Salt	£1,893
W. Shurmur	2,170	Brown, Kruse, & Co.	1,835
W. Watson	2,145	C. Simmons	1 773
J. H. Cocks	2,095	W. J. Maddison	1,705

LONDON.—For alterations and decorations at 9, Gt. Marylebone-street. Mr. Reilly, architect, 23, St. Swithin's-lane :—

Geo. Brittain, Kenning on	£1,180

No competition.

LONDON.—Accepted for alterations and repairs to three houses, Brady-street, Bethnal Green. Mr. W. W. Jenkinson, surveyor, 6, Moorgate-street :—

Geo. Brittain	£320

LONDON.—Accepted for the erection of warehouse, No. 3, New Inn Broadway, New Inn Yard, Shoreditch, for Mr. E. C. Street. Mr. W. H. Punnett, architect :—

B. R. Cegman	£185.

LONDON.—Accepted for the erection of warehouse, No. 4, for Mr. E. C. Street. Mr. W. H. Punnett, architect :—

B. R. Cegman	£863

LONDON.—For alterations to the Master's offices at the Hackney Union, Homerton, N.E., for the Guardians. Mr. W. A. Finch, architect, 76, Finsbury-pavement, E.C. :—

W. Silk & Son	£1,500	S. R. Lamble	£1,313
W. Shurmur	1,450	Chessum & Son*	1,200
T. E. Mitchell	1,393	* Accepted.	

LONDON.—For alterations and additions to the "Queen Hotel," Manchester-road, Poplar, E., for Mrs. G. Mantzen. Mr. Fred. A. Ashton, architect, 177, Romford-road, Stratford, E. :—

A. E. Symes	£4,480	G. Veale	£3,595
C. Simmons	4,[illegible]	Spencer & Co.	3,568
W. Watson	4,300	J. & H. Cocks*	3,350
W. J. Maddison	3,980	* Accepted.	

LONDON.—For the manufacture, supply, delivery, and erection of three triple-expansion engines, and six centrifugal pumping engines, together with condensers and all accessories complete, at the proposed new pumping-station at North Woolwich, for the London County Council :—

Fleming & Ferguson, Ltd.	£13,940	D. Stewart & Co., Ltd	£10,594
Drysdale & Co.	11,690	James Watt & Co.	10,490
		John Cochrane*	7,990

For the manufacture, supply, delivery, and erection of two Lancashire boilers, with all fittings complete, at the proposed pumping station.

D. Stewart & Co., Ltd.	£1,261 13 4	Tetlow Brothers	£1,120 0 0
Clayton, Son, & Co., Ltd	1,163 10 0	John Thompson	1,125 0 0
Tinsley, Ltd.	1,135 0 0	Edwin Danks & Co., Ltd.*	1,000 0 0
		* Accepted.	

LONDON.—For erecting new premises for the Stratford Co-operative Society, Plaistow. Mr. E. Pite, architect :—

Atkin & Green	£8,467	Co-operative Builders	£8,056
W. Watson	8,387	W. Shurmur	8,394
W. Beale	8,363	Pattison	8,273
Barrett & Power	8,343	Thomerson & Son	8,219
Gregar & Son	8,330	Harris & Wardrop	8,144
J. A. Reed	8,306		

LONDON.—For new wing, &c., to the convent, Clarendon-square, W. :—

W. Watson	£13,950	Coxhead	£12,377
Patman & Fotheringham	12,976	B. E. Nightingale	12,935
W. Shurmur	12,575	Minter & Co.	12,100
Smith & Sons	12,394		

LONGTON.—For rebuilding "Coach and Horses" and premises, for the Burton Brewery Company, Limited. Mr. Edward Forshaw, architect and surveyor, Burton-on-Trent. Quantities by the surveyor :—

Bull & Robinson	£1,756	Tomkinson & Bettelley	£1,750
T. R. Yuxall	1,750	F. H. Bennion, Longton*	1,729
		* Accepted.	

MAIDENHEAD.—For a steel lattice bridge, 65 ft. span, Bray, for the Berkshire County Council. Mr. Joseph Morris, County Surveyor, 156, Friar-street, Reading :—

Price & Cornelle	£2,362 10 0	Rammage, Gouge, & Co.	£755 19 0
Jesse Tideseley	972 0 0	J. O. Brettell	717 12 0
W. Richards & Son	853 0 0	G. H. Tucker	664 0 0
Cross & Cross	798 0 0	Thos. Woodall	658 16 6
Matthew T. Shaw	796 0 0	Dyne, Steel & Son	625 10 0
J. Shewell & Co.	784 18 11	A. J. Ellis	619 1 9

MANSFIELD.—For alterations and additions to the Mansfield and Mansfield Woodhouse District Hospital, in commemoration of her Majesty's Diamond Jubilee. Mr. R. Frank Vallance, hon. architect, Mansfield :—

H. Vickers	£1,774 0 0	Fisher Bros.	£1,628 12 2
J. H Vickers	1 687 4 8	J. Greenwood, Mansfield*	£1,520 0 0
Gilbert & Gabbitass	1,650 0 0	* Accepted.	
J. F. Price	1,646 13 0		

MANSFIELD. — For new banking premises, Market-street, Mansfield, for Messrs. Samuel Smith & Co., bankers, Nottingham. Mr. R. Frank Vallance, architect, Mansfield :—

J. J. Adams	£7,895 0	J. H. Vickers	£7,660 4
H. Vickers	7,832 0	Gilbert & Gabbitass*	7,589 0
		* Accepted.	

[All of Nottingham.]

MANSFIELD.—For erecting a dwelling house, Pleasley-hill, Mansfield, for Mr. Alfred Archer. Mr. R. Frank Vallance, architect, Mansfield :—

C. G. Percival	£395 0	J. W. Swelnidge, Mansfield*	£355 10
H. Brailsford & Son	395 0		
E. Turners	390 0	* Accepted.	

MIDDLETON (Lancs.).—For the execution of sewerage works, Wince Brook (Contracts Nos. 3 and 4), for the Corporation. Mr. H. L. Hinnell, C.E., 41, Corporation-street, Manchester :—

Contract No. 3.

G. Freeman & Sons, Hollinwood, Oldham.

Contract No. 4.

J. Ainscouth & Son, Oldham.

[As per schedule of prices.]

NORWICH.—For the execution of sewerage works, Contract 6, for the Corporation. Mr. A. E. Collins, C.E., Guildhall, Norwich :—

Workman	£45,500 0	Geo. Osenton†	£24,828 0
Monk & Newall	33,896 7	* Accepted.	
B. Cooke & Co., Battersea*	29,632 0	† Withdrawn.	

[City Engineer's estimate for above work, £30,000: plus £2,000 for contingencies, £32,000.]

OXFORD.—For alterations to Fish Market, and north end of No. 2 Avenue, Meat Market, for the Corporation :—

Ward Bros.	£1,580	W. Rose	£1,395
T. Ward	1,560	J. Wooldridge*	1,298
		* Accepted.	

[All of Oxford.]

POULTON-LE-FYLDE (Lancs.).—For the construction of sewerage works, for the Fylde Rural District Council. Messrs. Hinnell & Murphy, C.E., 41, Corporation-street, Manchester :—

W. Underwood & Bros., Dunkinfield, as per schedule of prices.

RHOSROBIN (near Wrexham).—For erecting St. Peter's Church, Rhosrobin, Rhosddu, Wrexham. Mr. J. H. Swainson, architect, Wrexham :—

Turner Bros.	£1,130	W. H. Wynnesley & Co.	£810
Jarvis Bros.	1,067	Thos. Rogers & Son, Brymbo*	722
F. C. Probert	1,056		
W. H. Samuel	975		

[Bricks, terra-cotta, lime, and sand, and casting stone, found.]

* Accepted at £805, including fir in place of spruce.

SEVENOAKS.—For levelling, paving, &c., Mount Harry-road East, for the Urban District Council. Mr. Jabez Mann, C.E., Council Offices, Sevenoaks :—

Thomas Adams	£1,476 0 0	E. Iles, Mitcham Common, Surrey*	£1,644 0
John Jackson	1,442 14 6		
Sidney Hudson	1,895 15 6		

Surveyor's estimate, £1,782.

* Accepted according to schedule of prices.

SNARESBROOK.—For the erection of residence, stabling, &c. Messrs. Gordon, Lowther, & Gunton, architects :—

J. Williams	£3,893	E. Lawrence & Son	£3,635
Munday & Co.	3,797	W. Shurmur	3 553
Patman & Fotheringham	3,698	Jellife & Son	3,550
Sabey & Sons	3,643	Snewin Bros.	3,248

SOWERBY BRIDGE (Yorks.).—For alterations, &c., Bolton Brow Wesleyan chapel, for the Trustees. Mr. A. G. Dalzell, architect, 15, Commercial-street, Hunfax. Quantities by architect :—

Halstead Brothers	£240 0 0	Matthew Hirst	£188 0
Fielding & Bottomley, Halifax*	215 15 10	* Accepted.	

STAINES.—For the supply of 470 tons of granite and 1,000 tons of flint, for the Urban District Council. Mr. E. J. Barrett, C.E., Town Hall, Staines :—

1½-in. Guernsey Granite.

	Per ton. s. d.
W. Griffiths	15 10
Mowlem & Co.	15 6
A. & F. Manuelle	15 2
L. Summerfield	14 9

2½ in. Leicester or other Granite.

Clee Hill Dhu Stone Company (per J. G. Bull & Co.)	15 0
Trickett & Sons	14 6
Enderby and Stoney Stanton Granite Company, Narborough, Leicester*	14 5
Narborough and Enderby Granite Company	14 1
Van Praagh & Co.	13 3
Croft Granite Company	12 5
Whitwick Granite Company	12 3
T. Wainwright	8 11

Flint.

E. J. Brodevick	6 11
Farnham Flint Company	6 7
W. Norris, Farnham*	6 7

* Accepted.

TRING.—For the erection of lych-gate, toolhouse, &c., Wilstone Cemetery. Mr. W. Huckvale, architect, Tring :—

E. Smith & Son	£240 0	Job Gregory, Long Marston (accepted)	£224
H. Fincher	226 5		
E. Wright	225 0		

UPTON PARK.—For alterations, &c., to the "White Hart" public-house, Upton Park. Mr. F. A. Ashton, architect :—

A. E. Symes	£2,675	Hoare & Farrow	£2,300
J. & H Cocks	2,502	W. J. Maddison	2,256
W. Shurmur	2,470	C. Simmons	2,230
W. Watson	2,420		

WALTHAMSTOW.—For erecting dwelling-house, Greenleaf-road, for Mr. John Clark. Mr. H. C. Marston, surveyor, Walthamstow :—

Padley	£465	G. W. Barker*	£425
Stewart & Wayman	450	* Accepted.	

WALTHAMSTOW.—For erecting residence at Prospect Hill. Mr. J. Williams Dunford, architect :—

G. Burrage	£1,972	E. Fuller & Son	£1,940
J. A. Reed	1,944	W. Lawrence	1,859
W. Shurmur	1,944		

WALTHAMSTOW.—For erection of church and schools, at Hoe-street, Walthamstow. Messrs. Gordon, Lowther, & Gunton, architects :—

E. Lawrence & Son	£5,505	S. J. Scott	£5,347
Edwards & Medway	5,397	W. Shurmur	5,347
W. Dabbs	5,397	J. Chessum & Son	5,260
Snewin Bros.	5,388	Coxhead	5,134
Bateman	5,347	Castle	4,845

WALTHAMSTOW.—For carrying out certain repairs and renovations at the undermentioned schools, for the Walthamstow School Board. Mr. W. A. Longmore, architect, Walthamstow :—

Jarvis.—Marsh-street Schools (boys)	£149 15
" (girls and infants)	2 5
Evans.—Gamrel-road Schools	149 0
Challis.—Higham Hill Schools	86 10
Pens.—Maynard-road Schools	82 10
Studd.—Pretoria-avenue Schools	75 10
Evans.—Markhouse-road Schools	69 10

WATFORD (Herts).—For the erection of branch bank for the London and South Western Bank, Limited. Messrs. Primrose & Anderson, architects, Watford. Quantities by Mr. R. J. Stamp :—

Yesbury	£4,890	Waterman	£4,744
Brightman	4,885	Turners, Limited	4,694
Godson & Son	4,874	Eames	4,660
Andrews & Son	4,860	Lamble	4,663
Tennant	4,796	Beer & Gash	4,591
Judge	4,767	Wiggs (accepted)	4,499

WHITWORTH (Lancs.).—For the construction of sewers, &c., for the District Council. Mr. H. L. Hinnell, C.E., 41, Corporation-street, Manchester :—

Enock Tempest, Marple, as per schedule of prices.

WHITCHURCH (Wales).—For the execution of sewerage works, for the Llandaff and Dinas Powis Rural District Council. Mr. W. Fenner, C.E., 17, Queen's-chambers, Cardiff :—

Frank Ashley	£376 0 0	Eli Rees*	£297 15 6
Wm. Amos	340 5 0	Ed. Williams	268 3 6
Mackay & Davies	330 10 0	Ed. Moore	260 13 3
Wm. Cox*	296 11 0	Jas. Wood	258 15 8
Varnes & Shaplin	296 8 0	Williams & Thomas, Cardiff†	253 1 6
A. S. Morgan & Co.	294 0 0		
Thos. Harris	291 3 0		

* Too late. † Accepted.

WITHINGTON (Lancs.).—For the erection of stables, workshops, and sheds at the Town's Yard, Withington, for the Urban District Council. Mr. A. H. Mountain, C.E., Town Hall, Withington :—

	Stabling.	Workshops, Sheds, &c.	Total.
Evan Roberts & Son	£387 0 0	£1,095 0 0	£1,482 0 0
Race & Newbould	320 2 10	1,219 8 9	1,539 11 7
Amos Mason	340 0 0	1,230 0 0	1,570 0 0
A. V. Sharratt	332 0 0	1,222 0 0	1,554 0 0
J. & J. Parish, Withington (accepted)	312 0 0	1,105 10 0	1,417 10 0

LONDON.—For making-up and paving Little Vale-place and Stanwick-road, S.W., for the Fulham Vestry. Mr. Chas. Bothell, C.E., Town Hall, Walham Green, S.W.

	Stanwick-road, Sec. II.					Little Vale-place				
	Roadway	York	Imperial	Victoria	Adamant	Roadway	York	Imperial	Victoria	Adamant
	£ s.	£ s.	£			£	£ s.	£		
Imperial Stone Co., Greenwich	—	—	45	—	—	—	—	29	—	—
J. Ball, Chiswick	144	—	—	—	—	69	—	—	—	—
Lawrence & Thacker, Up. Tooting	155	—	—	—	—	—	—	—	—	—
Nowell & Co., Kensington	190	58	—	—	—	115	35	—	—	—
E. Parry, Fulham	177 10	60 10	—	—	—	108	38 15	—	—	—
J. Mears, Fulham	170	—	—	—	—	98	—	—	—	—
M. I. Grosham, Hammersmith	198	—	—	—	—	104	—	—	—	—
G. Wapey & Co., Hammersmith	199	—	—	—	—	119	—	—	—	—

WIMBLEDON.—Accepted for building two villas in Southey road, Wimbledon. Mr. W. Banks, architect, 29A, Gracechurch-street, E.C.:—
Geo. Brittain £1,180

LONDON SCHOOL BOARD TENDERS.

At the meeting of the London School Board on Thursday, the following lists of tenders were submitted by the Works Committee :—

CHELSEA (Munster-road).—Interior and exterior painting :—
W. Homett ..... £695 0 0 | W. Brown* £322 16 0
F. Chidley 531 3 6

CHELSEA (Saunder's-road).—Interior painting :—
E. T. Folley ..... £630 0 | G. H. Sealy* £278 0
G. Neal ..... 375 0 | W. Brown 187 10
W. R. & A. Hide 230 15

CITY (Swan-street).—Painting interior and exterior :—
F. T. Chinches ..... £318 15 | A. W. Derby* £276 0

EAST LAMBETH (Sayer-street).—Interior and exterior painting :—
W. V. Good ..... £598 0 0 | B. E. Nightingale* £340 0 0
F. R. Blaxton 424 17 6

EAST LAMBETH (Surrey-square).—Interior painting :—
Holliday & Greenwood ..... £454 0 0 | B. E. Nightingale £368 0 0
D. Charteris ..... 390 0 0 | F. R. Blaxton* 322 17 6

EAST LAMBETH (Victory-place).—Interior cleaning (old portion), and interior painting (new portion) :—
B. E. Nightingale* £217

EAST LAMBETH (Wood's-road).—Interior painting :—
Maxwell Bros. Lim.* £324

FINSBURY (Pakeman-street).—Cleaning interior of J.M. School, and painting interior and exterior of S.M. School :—
E. Lawrance & Sons ..... £408 | Stevens Bros.* £370
T. Cruwys 407

GREENWICH (Blackwall-lane).—Interior and exterior painting :—
C. Foreman ..... £435 0 0 | W. Banks £334 11 6
E. Proctor ..... 336 0 0 | W. Holding & Son* 329 0 0

GREENWICH (Burrage-grove).—Interior painting :—
W. Banks ..... £425 | C. Foreman £379
Thomas & Edge ..... 399 | E. Proctor* 339

GREENWICH (Halstow-road).—Interior and exterior painting :—
H. Somerford & Son ..... £577 0 | W. Holding & Son £392 0
C. Foreman ..... 473 0 | W. Banks* 362 14

GREENWICH (High-street).—Interior and exterior painting :—
C. Foreman ..... £562 0 0 | W. Banks £459 11 6
Thomas & Edge ..... 541 0 0 | E. Proctor* 420 0 0

GREENWICH (Sydenham Hill-road).—Interior painting :—
A. Black & Son ..... £430 | G. Kemp £279
E. P. Bulled & Co. ..... 293 | J. & C. Bowyer* 258
W. Akers & Co. 289

HACKNEY (Hackney Divisional Offices).—Interior cleaning :—
G. Barker ..... £79 0 | W. Silk & Son* £40
G. Wales 52 16

HACKNEY (Sydney-road).—Exterior painting :—
G. Wales ..... £348 | Stevens Bros.* £228
W. Silk & Son ..... 247 | A. W. Derby 227

HACKNEY (Wenlock-road).—Interior painting :—
McCormick & Sons ..... £454 0 | J. Grover & Son £358 10
Perkins & Co. ..... 404 0 | Stevens Bros.* 351 0
T. Nicholson 368 0

HAGGERSTON-ROAD.—Painting :—
McCormick & Sons ..... £570 | G. Barker £546
W. Shurmer ..... 553 | J. Grover & Sons* 533

HEBER-ROAD.—Painting :—
Holliday & Greenwood ..... £777 | Rice & Son* £495

HIGH-STREET (Bromley, E.).—Painting :—
W. G. Beaumont & Son ..... £330 | A. W. Derby £322
D. Gibbs & Co. ..... 340 | J. T. Robey* 300

LONDON FIELDS.—Painting :—
McCormick & Sons ..... £727 0 0 | G. Barker £520 0 0
F. Britton ..... 583 4 6 | Silk & Son 500 0 0
C. Willmott ..... 576 14 0 | J. Morrison* 458 0 0

SOUTHWARK (Westminster Bridge-road).—Interior and exterior painting :—
F. G. Minter* ..... £107 10 | G. Foxley £102 10

TOWER HAMLETS (Portman-place) :—
W. G. Beaumont & Son ..... £546 | A. W. Derby £477
G. Wales ..... 540 | A. E. Symes* 389

WEST LAMBETH ("Latchmere" School).—Exterior painting :—
H. J. & G. Mallett ..... £270 | E. B. Tucker £249
Holloway Bros. ..... 230 | H. Brown* 195
* Accepted.

TO CORRESPONDENTS.

J. H. G. & Co., H. C., A. S. (amount should have been stated).—A. G. M'B., J. E., G. G. (below our limit).

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